VPDES PERMIT PROGRAM FACT SHEET

FILE NO: 33

This document gives pertinent information concerning the VPDES Permit listed below. This permit is being processed as a **MAJOR INDUSTRIAL** permit.

1. **PERMIT NO.**: VA0003018 **EXPIRATION DATE**: May 15, 2010

2. **FACILITY NAME AND LOCAL MAILING ADDRESS**

Western Refining Yorktown, Inc.
2201 Goodwin Neck Road
Yorktown, VA 23692

FACILITY LOCATION ADDRESS (IF DIFFERENT)

Same

CONTACT AT FACILITY:
NAME: Ms. Jane Kelley
TITLE: Environmental Manager
PHONE: (757) 898-9732

CONTACT AT LOCATION ADDRESS
NAME: Same
TITLE:
PHONE: ( )

3. **OWNER CONTACT**: (TO RECEIVE PERMIT)
NAME: Mr. John A. Rossi
TITLE: Vice President
COMPANY NAME: (IF DIFFERENT)
ADDRESS: 2201 Goodwin Neck Road
Yorktown, VA 23692
PHONE: (757) 898-9727

CONSULTANT CONTACT:
NAME:
FIRM NAME:
ADDRESS:

PHONE: ( )

4. **PERMIT DRAFTED BY**: DEQ, Water Permits, Regional Office

Permit Writer(s): Melinda Woodruff Date(s): 12/14/2009
Reviewed By: Mark Sauer Date(s): 3/12-16/10

5. **PERMIT ACTION:**

( ) Issuance (x) Reissuance ( ) Revoke & Reissue ( ) Owner Modification
( ) Board Modification ( ) Change of Ownership/Name [Effective Date:]

6. **SUMMARY OF SPECIFIC ATTACHMENTS LABELED AS:**

Attachment 1	Site Inspection Report/Memorandum
Attachment 2	Discharge Location/Topographic Map
Attachment 3	Schematic/Plans & Specs/Site Map/Water Balance
Attachment 4	TABLE I - Discharge/Outfall Description
Attachment 5	TABLE II - Effluent Monitoring/Limitations
Attachment 6	Effluent Limitations/Monitoring Rationale/Suitable Data/Antidegradation/Antibacksliding
Attachment 7	Special Conditions Rationale
Attachment 8	Toxics Monitoring/Toxics Reduction/WET Limit Rationale
Attachment 9	Material Stored
Attachment 10	Receiving Waters Info./Tier Determination/STORET Data/Stream Modeling
Attachment 11	303(d) Listed Segments
Attachment 12	TABLE III(a) and TABLE III(b) - Change Sheets
Attachment 13	NPDES Industrial Permit Rating Worksheet and EPA Permit Checklist
Attachment 14	Chronology Sheet
Attachment	Public Participation

APPLICATION COMPLETE: February 10, 2010

7. **PERMIT CHARACTERIZATION**: (Check as many as appropriate)

(x) Existing Discharge
( ) Proposed Discharge
( ) Municipal
SIC Code(s)
(x) Industrial
SIC Code(s)2911
( ) POTW
( ) PVOTW
(x) Private
( ) Federal
( ) State
( ) Publicly-Owned Industrial

(x) Effluent Limited
(x) Water Quality Limited
( ) WET Limit
( ) Interim Limits in Permit
( ) Interim Limits in Other Document
( ) Compliance Schedule Required
( ) Site Specific WQ Criteria
( ) Variance to WQ Standards
( ) Water Effects Ratio
(x) Discharge to 303(d) Listed Segment
(x) Toxics Management Program Required
( ) Toxics Reduction Evaluation
(x) Storm Water Management Plan
( ) Pretreatment Program Required
( ) Possible Interstate Effect
(x) CBP Significant Dischargers List

8. **RECEIVING WATERS CLASSIFICATION**: River basin information.

Outfall No(s): 001 (101, 102), 002 (201), 004

Receiving Stream:	York River
River Mile:	8-YRK 1.88, 8-YRK 1.86, 8-YRK 1.89
Basin:	York River Basin
Subbasin:	NA
Section:	1
Class:	II
Special Standard(s):	a, NEW-17
Tidal:	YES
7-Day/10-Year Low Flow:	N/A
1-Day/10-Year Low Flow:	N/A
30-Day/5-Year Low Flow:	N/A
Harmonic Mean Flow:	N/A

9. **FACILITY DESCRIPTION:** Describe the type facility from which the discharges originate.

EXISTING industrial discharge resulting from the operation of a petroleum refining facility.

10. **LICENSED OPERATOR REQUIREMENTS**: ( ) No (x) Yes Class: **II**

11. **RELIABILITY CLASS**: Industrial Facility - NA

12. **SITE INSPECTION DATE**: September 30, 2009 **REPORT DATE**: October 2, 2009

Performed By: Clyde Gantt

SEE ATTACHMENT 1 (Site Visit Memo December 2009 included)

13. **DISCHARGE(S) LOCATION DESCRIPTION**: Provide USGS Topo which indicates the discharge location, significant (large) discharger(s) to the receiving stream, water intakes, and other items of interest.

Name of Topo: Poquoson West Quadrant No.: 65B **SEE ATTACHMENT 2**

14. **ATTACH A SCHEMATIC OF THE WASTEWATER TREATMENT SYSTEM(S) [IND. & MUN.]. FOR INDUSTRIAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE PRODUCTION CYCLE(S) AND ACTIVITIES. FOR MUNICIPAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE TREATMENT PROVIDED.**

Narrative: The Refinery produces unleaded gasoline, diesel fuels, liquefied petroleum gas, butane, furnace oil, petroleum coke, and sulfur. Currently, the Refinery has the capacity to refine approximately 70,000 barrels of crude oil per day.

SEE ATTACHMENT 3 (CAN ALSO REFERENCE TABLE I)

15. **DISCHARGE DESCRIPTION**: Describe each discharge originating from this facility.

SEE **TABLE I** (OR CAN SUBSTITUTE PAGE 2C) - **SEE ATTACHMENT 4**

16. **COMBINED TOTAL FLOW**:

TOTAL: 77.45 MGD (for public notice)

PROCESS FLOW: 71.24 MGD (IND.)(101,102)

NONPROCESS/RAINFALL DEPENDENT FLOW: 6.21 (Est.)(200, 201, 004)

DESIGN FLOW: 0.003 MGD (MUN.)(101 municipal)

17. **STATUTORY OR REGULATORY BASIS FOR EFFLUENT LIMITATIONS AND SPECIAL CONDITIONS**: (Check all which are appropriate)

- [X] State Water Control Law
- [X] Clean Water Act
- [X] VPDES Permit Regulation (9 VAC 25-31-10 et seq.)
- [X] EPA NPDES Regulation (Federal Register)
- [ ] EPA Effluent Guidelines (40 CFR 133 or 400 - 471)
- [X] Water Quality Standards (9 VAC 25-260-5 et seq.)
- [ ] Wasteload Allocation from a TMDL or River Basin Plan

18. **EFFLUENT LIMITATIONS/MONITORING**: Provide all limitations and monitoring requirements being placed on each outfall.

SEE TABLE II - ATTACHMENT 5

19. **EFFLUENT LIMITATIONS/MONITORING RATIONALE**: Attach any analyses of an outfall by individual toxic parameter. As a minimum, it will include: statistics summary (number of data values, quantification level, expected value, variance, covariance, 97th percentile, and statistical method); wasteload allocation (acute, chronic and human health); effluent limitations determination; input data listing. Include all calculations used for each outfall and set of effluent limits and those used in any model(s). Include all calculations/documentation of any antidegradation or anti-backsliding issues in the development of any limitations; complete the review statements below. Provide a rationale for limiting internal waste streams and indicator pollutants. Attach chlorine mass balance calculations, if performed. Attach any additional information used to develop the limitations, including any applicable water quality standards calculations (acute, chronic and human health).

OTHER CONSIDERATIONS IN LIMITATIONS DEVELOPMENT:

VARIANCES/ALTERNATE LIMITATIONS: Provide justification or refutation rationale for requested variances or alternatives to required permit conditions/limitations. This includes, but is not limited to: waivers from testing requirements; variances from technology guidelines or water quality standards; WER/translator study consideration; variances from standard permit limits/conditions.

N/A

SUITABLE DATA: In what, if any, effluent data were considered in the establishment of effluent limitations and provide all appropriate information/calculations.

All suitable effluent data were reviewed.

ANTIDEGRADATION REVIEW: Provide all appropriate information/calculations for the antidegradation review.

The receiving stream has been classified as tier 1; therefore, no further review is needed. Permit limits have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

ANTIBACKSLIDING REVIEW: Indicate if antibacksliding applies to this permit and, if so, provide all appropriate information.

There are no backsliding issues to address in this permit (i.e., limits as stringent or more stringent when compared to the previous permit).

SEE ATTACHMENT 6

20. **SPECIAL CONDITIONS RATIONALE:** Provide a rationale for each of the permit's special conditions.

SEE ATTACHMENT 7

21. **TOXICS MONITORING/TOXICS REDUCTION AND WET LIMIT SPECIAL CONDITIONS RATIONALE:** Provide the justification for any toxics monitoring program and/or toxics reduction program and WET limit.

SEE ATTACHMENT 8

22. **SLUDGE DISPOSAL PLAN:** Provide a description of the sludge disposal plan (e.g., type sludge, treatment provided and disposal method). Indicate if any of the plan elements are included within the permit.

Flows from the aboveground and belowground sewer systems go to the Corrugated Plate Interceptor (CPI) Separators at the facility. CPI Separators recover sludge and oil from process wastewater. Recovered oil from the CPI separators is recycled through the slop oil system. Sludge from the CPIs, is recycled in the Coker. In the event the material cannot be processed at the Coker, CPI sludge may be sent as a hazardous waste to an approved off-site facility.

23. **MATERIAL STORED:** List the type and quantity of wastes, fluids, or pollutants being stored at this facility. Briefly describe the storage facilities and list, if any, measures taken to prevent the stored material from reaching State waters.

SEE ATTACHMENT 9

24. **RECEIVING WATERS INFORMATION**: Refer to the State Water Control Board's Water Quality Standards [e.g., River Basin Section Tables (9 VAC 25-260-5 et seq.). **Use 9 VAC 25-260-140 C (introduction and numbered paragraph) to address tidal waters where fresh water standards would be applied or transitional waters where the most stringent of fresh or salt water standards would be applied.** Attach any memoranda or other information which helped to develop permit conditions (i.e. tier determinations, PReP complaints, special water quality studies, STORET data and other biological and/or chemical data, etc.

SEE ATTACHMENT 10

25. **305(b)/303(d) Listed Segments**: Indicate if the facility discharges to a segment that is listed on the current 303(d) list and, if so, provide all appropriate information/calculations.

This facility discharges directly to York River. This receiving stream segment has been listed in Category 5 of the 305(b)/303(d) list for non-attainment of aquatic plants, open water aquatic life and shallow-water submerged aquatic vegetation dissolved oxygen, attributed to excessive nutrients; fish consumption attributed to PCB in fish tissue. A TMDL has not been prepared or approved for this stream segment. The permit contains a TMDL reopener clause which will allow the it to be modified, in compliance with Section 303(d)(4) of the Act once a TMDL is approved.

SEE ATTACHMENT 11

26. **CHANGES TO PERMIT**: Use **TABLE III(a)** to record any changes from the previous permit and the rationale for those changes. Use **TABLE III(b)** to record any changes made to the permit during the permit processing period and the rationale for those changes [i.e., use for comments from the applicant, VDH, EPA, other agencies and/or the public where comments resulted in changes to the permit limitations or any other changes associated with the special conditions or reporting requirements].

SEE ATTACHMENT 12

27. **NPDES INDUSTRIAL PERMIT RATING WORKSHEET**:

TOTAL SCORE: 155 **SEE ATTACHMENT 13**

28. **DEQ PLANNING COMMENTS RECEIVED ON DRAFT PERMIT**: Document any comments received from DEQ planning.

The discharge is not addressed in any planning document but will be included when the plan is updated.

29. **PUBLIC PARTICIPATION**: Document comments/responses received during the public participation process. If comments/responses provided, especially if they result in changes to the permit, place in the attachment.

VDH/DSS COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the Virginia Dept. of Health and the Div. of Shellfish Sanitation and noted how resolved.

The VDH reviewed the application and waived their right to comment and/or object on the adequacy of the draft permit.

The DSS has no comments on the application/draft permit.

EPA COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the U.S. Environmental Protection Agency and noted how resolved.

EPA has no objections to the adequacy of the draft permit.

ADJACENT STATE COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from an adjacent state and noted how resolved.

Not Applicable.

OTHER AGENCY COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from any other agencies (e.g., VIMS, VMRC, DGIF, etc.) and noted how resolved.

Not Applicable.

OTHER COMMENTS RECEIVED FROM RIPARIAN OWNERS/CITIZENS ON DRAFT PERMIT: Document any comments received from other sources and note how resolved.

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation, and no comments were received.

PUBLIC NOTICE INFORMATION: Comment Period: Start Date April 11, 2010
End Date May 11, 2010

Persons may comment in writing or by e-mail to the DEQ on the proposed reissuance of the permit within 30 days from the date of the first notice. Address all comments to the contact person listed below. Written or e-mail comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requestor's interests would be directly and adversely affected by the proposed permit action.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Melinda Woodruff at: Department of Environmental Quality (DEQ), Tidewater Regional Office, 5636 Southern Boulevard, Virginia Beach, VA 23462. Telephone: 757-518-2174 E-mail: Melinda.Woodruff@deq.virginia.gov

Following the comment period, the Board will make a determination regarding the proposed reissuance. This determination will become effective, unless the Director grants a public hearing. Due notice of any public hearing will be given.

30. **ADDITIONAL FACT SHEET COMMENTS/PERTINENT INFORMATION:**

ATTACHMENT 1

SITE INSPECTION REPORT/MEMORANDUM

Facility:	WESTERN REFINING YORKTOWN, INC.
County/city:	YORK COUNTRY

VPDES NO.	VA0003018

DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date:	**September 30, 2009**	Date form completed:	**October 2, 2009**
Inspection by:	**Clyde Gantt**	Inspection agency:	**DEQ/TRO**
Time spent:	8 Hours	Announced Inspection:	[X] Yes [ ] No
Reviewed by: **Kenneth T. Raum**		Photographs taken at site?	[ ] Yes [X] No
Present at inspection:	**Jane Kelley – Environmental Mgr (757) 898-9732, James Maguire – Technical Mgr.**		

FACILITY TYPE:	FACILITY CLASS:
( ) Municipal	(X) Major
(X) Industrial	( ) Minor
( ) Federal	( ) Small
( ) VPA/NDC	( ) High Priority ( ) Low Priority

TYPE OF INSPECTION:

Routine	X	Reinspection		Compliance/assistance/complaint	

Date of previous inspection:	**May 10, 2007**	Agency:	**DEQ/TRO**

Population Served:		Connections Served:	

Last Month Average: Influent	BOD_5 (mg/l)		TSS (mg/l)		Flow (MGD)			
	Other:							
Last Month Average: Outfall 101 Effluent August, 2009	BOD_5 (lbs/d)	**62.4**	TSS (lbs/d)	**147.4**	Flow (MGD)	**1.43**	NH_3 (lbs/d)	**5.04**
	Other: **TOC – 419 lbs/d, Phenols – 0.1 lbs/d**							
Last Quarter Average: Outfall 101 Effluent June – August, 2009	BOD_5 (lbs/d)	**66.4**	TSS (lbs/d)	**169**	Flow (MGD)	**1.27**	NH_3 (lbs/d)	**29.3**
	Other: **TOC – 355 lbs/d, Phenols - .15 lbs/d**							

Data verified in preface:	Updated?		NO CHANGES?	X
Has there been any new construction?		YES		NO X
If yes, were the plans and specifications approved?		YES		NO X
DEQ approval date:				

COPIES TO: (X) DEQ/TRO; (X) DEQ/OWCP; (X) OWNER; (X) OPERATOR; (X) EPA-Region III; ( ) Other:

FACILITY: Western Refining Yorktown **VA0003018**

PLANT OPERATION AND MAINTENANCE																
1.	Class/number of licensed operators:	I	**1**	II		III		IV		Trainee						
2.	Hours per day plant manned?	**24 Hrs Day**														
3.	Describe adequacy of staffing	GOOD		AVERAGE	**X**	POOR										
4.	Does the plant have an established program for training personnel							YES	**X**	NO						
5.	Describe the adequacy of training	GOOD		AVERAGE	**X**	POOR										
6.	Are preventative maintenance tasks scheduled							YES	**X**	NO						
7.	Describe the adequacy of maintenance	GOOD		AVERAGE	**X**	POOR										
8.	Does the plant experience any organic/hydraulic overloading?							YES		NO	**X**					
	If yes, identify cause/impact on plant															
9.	Any bypassing since last inspection?							YES		NO	**X**					
10.	Is the standby electrical generator operational?					YES	**X**	NO		NA						
11.	How often is the standby generator exercised?	**Weekly (Wed. @ Noon)**														
	Power transfer switch?	**Yes**		ALARM SYSTEM?	**Yes**											
12.	When was the cross connection last tested on the potable supply?	**8/1/09**														
13.	Is the STP alarm system operational?					YES	**X**	NO		NA						
14.	Is sludge disposed in accordance with an approved SMP					YES	**X**	NO		NA						
15.	Is septage received by the facility?							YES		NO	**X**					
	Is septage loading controlled?					YES		NO		NA	**X**					
	Are records maintained?					YES		NO		NA	**X**					

OVERALL APPEARANCE OF FACILITY	GOOD		AVERAGE	**X**	POOR	

COMMENTS:	**The facility is generally clean. Operator licenses kept at training office and not viewed except the one noted.**

PLANT RECORDS

	WHICH OF THE FOLLOWING RECORDS DOES THE PLANT MAINTAIN?							
	Operational logs for each process unit	YES	X	NO		NA		
	Instrument maintenance and calibration	YES	X	NO		NA		
	Mechanical equipment maintenance	YES	X	NO		NA		
1.	Industrial waste contribution (municipal facilities)	YES		NO		NA	X	

	WHAT DOES THE OPERATIONAL LOG CONTAIN					
	Visual Observations	X	Flow Measurement	X	Laboratory Results	X
2.	Process Adjustments	X	Control Calculations		Other?	

COMMENTS:

	WHAT DO THE MECHANICAL EQUIPMENT RECORDS CONTAIN?				NA	
	MFG. Instructions	X	As Built Plans/specs	X	Spare Parts Inventory	X
3.	Lube Schedules	X	Other?		Equipment/parts Suppliers	X

COMMENTS:

	WHAT DO INDUSTRIAL WASTE CONTRIBUTION RECORDS CONTAIN? (MUNICIPAL)		NA	X
	Waste Characteristics		Impact on Plant	
4.	Location and Discharge Types		Other?	

COMMENTS:

	WHICH OF THE FOLLOWING RECORDS ARE AT THE PLANT & AVAILABLE TO PERSONNEL?						NA	
	Equipment Maintenance Records	X	Industrial Contributor Records					
5.	Operational Log	X	Sampling/testing Records	X	Instrumentation Records			X
6.	Records not normally available to personnel at their location:	**Records kept at various "shops" on the facility.**						
7.	Were the records reviewed during the inspection	YES	X	NO				
8.	Are records adequate and the O&M manual current?	YES	X	NO				
9.	Are the records maintained for the required 3-year time period	YES	X	NO				

COMMENTS:

SAMPLING											
1.	Are sampling locations capable of providing representative samples?					YES	X	NO	
2.	Do sample types correspond to VPDES permit requirements?					YES	X	NO	
3.	Do sampling frequencies correspond to VPDES permit requirements?					YES	X	NO	
4.	Does plant maintain required records of sampling?					YES	X	NO	
5.	Are composite samples collected in proportion to flow?	YES	X	NO		NA	
6.	Are composite samples refrigerated during collection?	YES	X	NO		NA	
7.	Does the plant run operational control tests?	YES	X	NO		NA	
COMMENTS:											

TESTING									
	Who performs the testing?	Plant	X	Central Lab	X	Commercial Lab	X
1.	Name: **J.R. Reed Labs performs analysis for TOC and Total Cr.**						
IF THE PLANT PERFORMS ANY TESTING, PLEASE COMPLETE QUESTIONS 2-4							
2.	Which total residual chlorine method is used?	**DPD/FAS**					
3.	Does plant appear to have sufficient equipment to perform required tests?	YES	X	NO	
4.	Does testing equipment appear to be clean and/or operable?	YES	X	NO	
COMMENTS:							

FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY											
1.	Is the production process as described in permit application? If no, describe changes in comments section.	YES	X	NO		NA	
2.	Are products/production rates as described in the permit application? If no list differences in comments section.	YES	X	NO		NA	
3.	Has the Agency been notified of the changes and their impact on plant effluent? Date agency notified:	YES		NO		NA	X
COMMENTS: **Outfall 101 has limits based on Federal Effluent Guidelines (BAT & BPT). The WWTP conducts some operational testing. All VPDES sampling and analysis, except TOC and Total Chrome, are performed by the facility laboratory.**											

PROBLEMS IDENTIFIED AT LAST INSPECTION:		CORRECTED	NOT CORRECTED
1.	None		

SUMMARY

INSPECTION COMMENTS:

1.	The Stormwater Pollution Prevention Plan (SWPPP) was quickly reviewed on site and no problems were noted. However, in subsequent discussions with TRO staff, the plan may not be up to date. There are RCRA Corrective Action Management Units (CAMUs) on site. These units are for management of remediated wastes across the facility. This includes the previous wastewater treatment ponds. Stormwater runoff from these sites had not been addressed in the plan as of June, 2009. The plan should have been updated to reflect stormwater runoff during construction (exposed soils) and post remediation runoff. Additionally, the previous "Landfarm 10" just west of the WWTP is required to be dewatered and that discharges via outfall 002. This was addressed in Lisa Silvia's letter of June 19, 2009.
2.	Per Ms. Kelley, some documents such as the Sludge Management Plan (SMP) were being used to complete the permit application due in November and were not available for review.
3.	Some of the tank farm bermed areas were checked. All those viewed were dry and clean. One bermed tank area on the west side was used for tank bottoms and the soil is stained black. This area is to become a remediation site.
4.	There is a vehicle/equipment wash site on the north side of the facility. This is a contained concrete pad with a closed loop washwater system. Oil is recovered as needed.
5.	Inspected the Cracking and Coking areas. All plant areas are on a contained concrete pad and stormwater is routed to the treatment plant. The coking area has a closed loop system for water used to cut the coke. Stormwater from the coke yard is reused in the system. Some portions of the coke storage yard are not contained. Stormwater from this area flows through sedimentation ponds (not viewed) with eventual discharge via outfall 002.
6.	Herbicides are used along the facility pipelines and probably in the tank bermed areas.
7.	Overall, the industrial areas appear contained with flows routed to the treatment plant. The non-industrial areas were generally clean. No problems were noted during the site inspection.

COMPLIANCE RECOMMENDATIONS FOR ACTION:

1.	Ensure that the SWPPP is accurate and all potential stormwater contamination is addressed. Additionally, please ensure that all RCRA activities are addressed in the VPDES Permit application as needed.
2.	Please ensure that all required documentation is available for review upon request. This includes the SWPPP and associated inspections and evaluations, maintenance and instrumentation records, operator licensing, and laboratory records.

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
LABORATORY INSPECTION REPORT

10/01

FACILITY NO:	INSPECTION DATE:	PREVIOUS INSP. DATE:	PREVIOUS EVALUATION:	TIME SPENT:
VA0003018	September 30, 2009	May 10, 2007	D	9 Hours

NAME/ADDRESS OF FACILITY:

Western Refining Yorktown, Inc.
2201 Goodwin Neck Road
Grafton, VA 23692

Previously: Giant Yorktown Refinery

FACILITY CLASS:

(X) MAJOR
( ) MINOR
( ) SMALL
( ) HIGH PRIORITY
( ) LOW PRIORITY

FACILITY TYPE:

( ) MUNICIPAL
(X) INDUSTRIAL
( ) FEDERAL
( ) COMMERCIAL LAB
( ) VPA/NDC

UNANNOUNCED INSPECTION?

( ) YES
(X) NO

FY-SCHEDULED INSPECTION?

(X) YES
( ) NO

INSPECTOR(S):
Clyde Gantt

REVIEWERS:
Kenneth T. Raum

PRESENT AT INSPECTION:
Wanda Stevens – Lab Sup. (757) 898-9731
Jane Kelley – Env. Mgr.

LABORATORY EVALUATION	DEFICIENCIES? Yes	No
LABORATORY RECORDS	X	
GENERAL SAMPLING & ANALYSIS		X
LABORATORY EQUIPMENT		X
TEMPERATURE ANALYSIS PROCEDURES		X
pH ANALYSIS PROCEDURES	X	
TOTAL RESIDUAL CHLORINE ANALYSIS PROCEDURES		X

QUALITY ASSURANCE/QUALITY CONTROL

Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
	REPLICATE SAMPLES		
	SPIKED SAMPLES		
X	STANDARD SAMPLES		Weekly
	SPLIT SAMPLES		
X	SAMPLE BLANKS		Weekly
	OTHER		
X	EPA-DMR QA DATA?	RATING: (X) No Deficiency ( ) Deficiency (X) NA	

X	**QC SAMPLES PROVIDED?**	**RATING:** (X) No Deficiency ( ) Deficiency (X) NA

COPIES TO: (X) DEQ/TRO; (X) DEQ/OWCP; (X) OWNER; (X) EPA-Region III; ( ) Other:

Memo

To: File

From: Melinda Woodruff

Date: January 4, 2010

Re: Western Refining Yorktown, Inc.

VPDES No. 0003018

On December 21, 2009, Mark Sauer and I performed a site visit at Western Refining Yorktown, Inc. for the reissuance of the major industrial wastewater discharge VPDES permit no. VA0003018. The Environmental Manager, Jane Kelley, was representing the facility owner and Keith Gentry from Operations and Tom Numbers from Environmental Resource Management were also in attendance. The VPDES permit applies to the storm water and wastewater associated with the operations of a petroleum refining facility.

The site is located at 2201 Godwin Neck Road in Yorktown, on the York River. The facility discharges storm water runoff and process wastewaters. The basic contributions to the outfalls are as follows: Outfall 001 is a final discharge comprised of two separate internal discharges (101 and 102) of once-thru cooling water, treated process and sanitary wastewaters and reject from Reverse Osmosis water treatment activities. Outfall 002 consists of storm water runoff from areas outside of product storage, movement and/or processing locations. In addition, negligible quantities of one-through cooling waters to maintain flow through storm water basin and if not diverted to treatment prior to outfall 001, hydrostatic test water from outfall 201 may be a contributing flow. Outfall 004 discharges from the fire line flushing and freeze protection at the pier. The above ground sewer consists of stormwater associated with process wastewater and the below ground sewer handles the tank areas or ditch systems with dual valves.

When we arrived we discussed the application for reissuance. In the cover letter Western Refining had made several requests which we discussed, here is a breakdown of our discussions:
Outfall 101 Classification: agreed, 101 is a process wastewater outfall.
Outfall 102 Diversions to Outfall 002: this may continue. No notification required we requested they document in house.
Nutrient Enriched Water Reopener: no, facility must maintain separate general permit because the general permit is a separate regulation.
Sampling Data Clarifications: 1) The facility is investigating the sources of radioactive materials; we referred them to the owners of the source waters for possible information.
2) The facility will resubmit the sampling data for corrections on the "believed to be present" check boxes. Outfall 004 consists mainly of freeze-protection water, which consists solely of a combination of non-contact Hampton Roads Sanitation (HRSD) recycle water and/or water from the City of Newport News. In the application Form 12C-Item IIA-B, Water Flow Schematic Boilers, shows an arrow indicating the HRSD reuse water is part of the RO Unit Reject and Filter Backwash wastewater which could flow to Outfall 001 or 002 then onto the Raw Water Tank used for the fire water and cooling water system. We asked for clarification on this because during this issuance we will be adding fecal coliform and enterococci testing

on the outfalls which these parameters apply. The facility will inform us of the changes to the flow chart if any.
3) The facility will be providing corrected sampling data sheets.

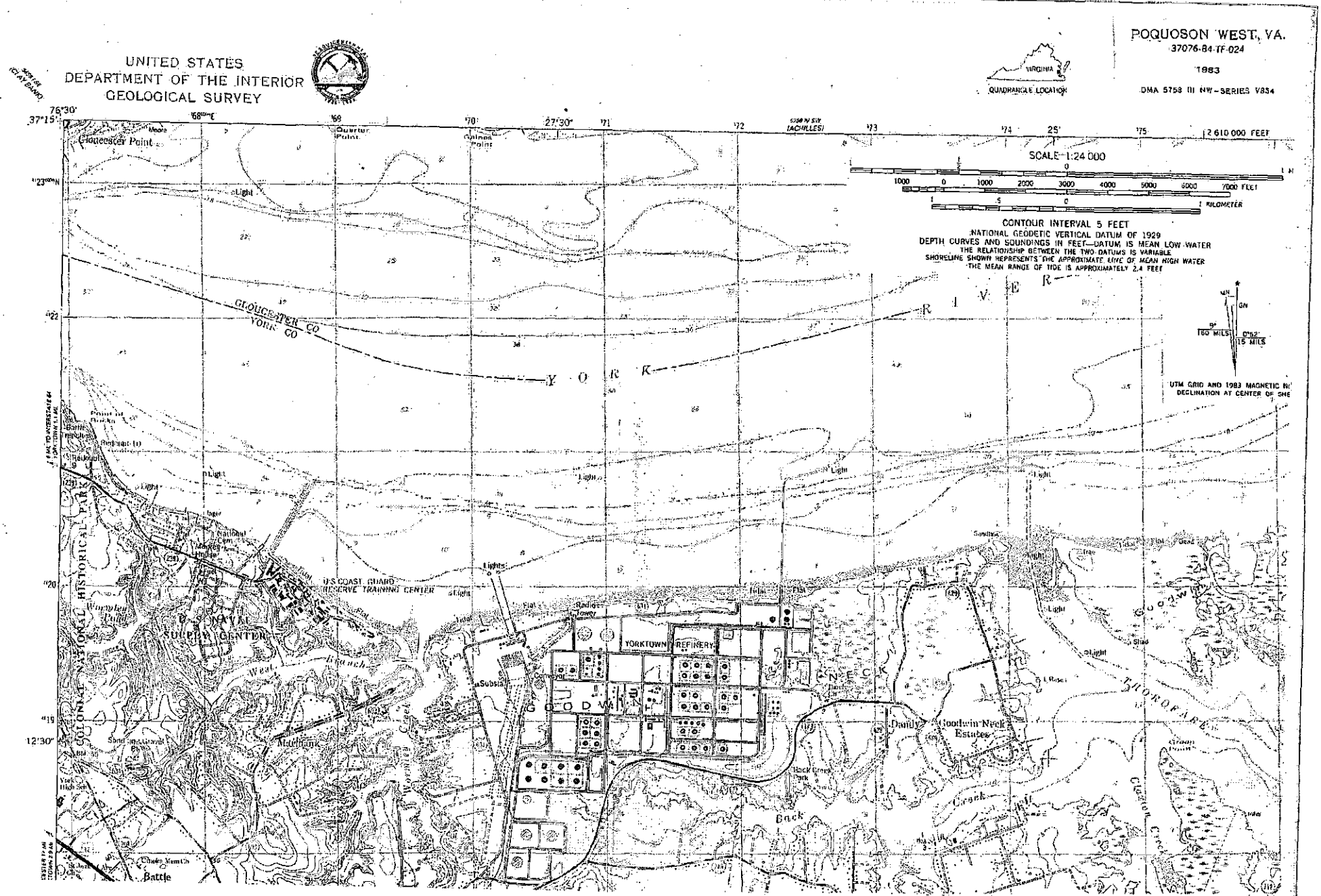
We requested information from the facility as well:
1) During the 2005 reissuance of the permit, a new sour water stripper was projected to be installed; this was added in the spring of 2007.
2) We requested more specific breakdown of the process capacities. In order to develop the factors associated with facility size and its process configuration, more detail is needed for this permit reissuance.
3) In reviewing the data submitted with the applications besides what has already been discussed, Outfall 102 had a 500 Mpn/100 mL value for fecal coliform. We requested an explanation of this. The facility discussed resampling the outfall.
4) We confirmed there is no transfer of bilge, ballast and other potentially contaminated wastewater flow from vessels loading and/or offloading products to the facility for treatment.
5) We requested updated raw, source, and storm water data, Figure 1 Water Flow Schematic.
6) We requested an updated site topographic map with the Outfalls marked in proper locations which were provided during the site visit.

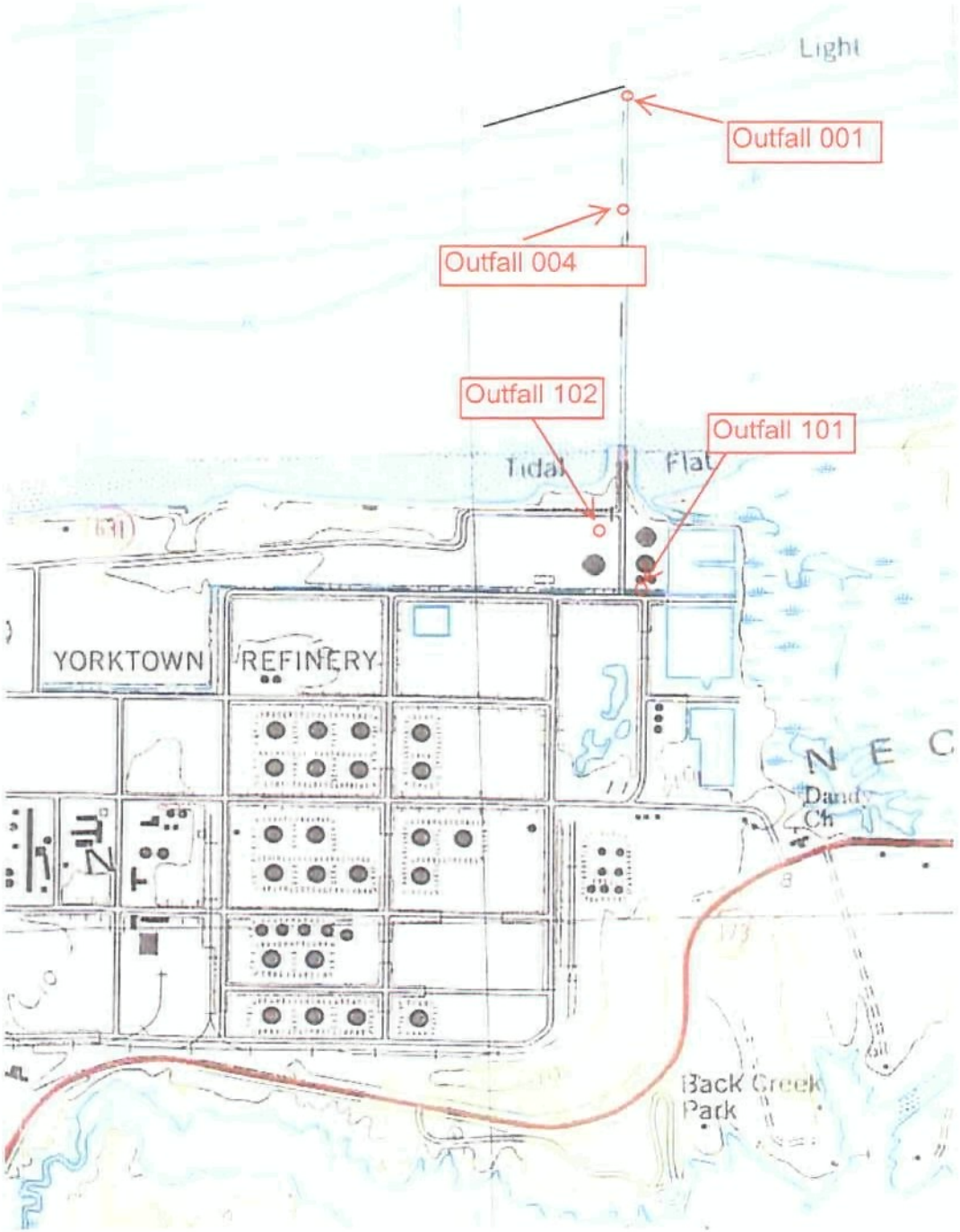
We provided copies of emails and the schematics from above with our requested information. In addition a copy of the 2005 fact sheet was emailed to Ms. Kelley on January 5, 2010.

After our discussions, we toured the facility. We went through the process areas and the aboveground storage tank areas. We went to the wastewater treatment area and finally to each outfall. The facility appeared in good condition.

ATTACHMENT 2

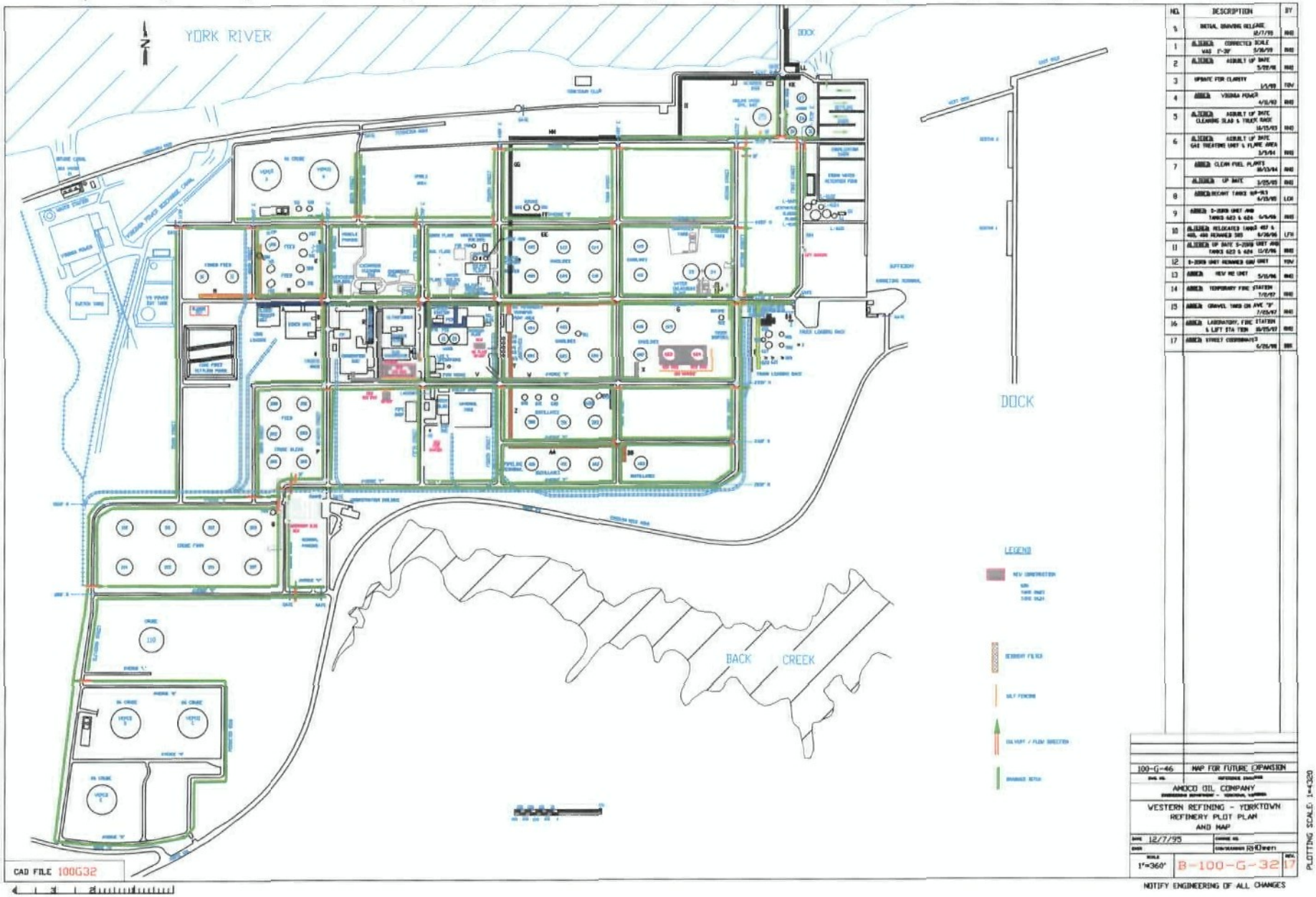
DISCHARGE LOCATION/TOPOGRAPHIC MAP


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
POQUOSON WEST, VA.
37076-84-TF-024
1983
DMA 5758 III NW-SERIES V834
VIRGINIA
QUADRANGLE LOCATION
SCALE 1:24 000
CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 2.4 FEET
UTM GRID AND 1983 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
Gloucester Point
Quarter Point
Guinea Point
GLOUCESTER CO
YORK CO
YORK RIVER
COLONIAL NATIONAL HISTORICAL PARK
U.S. NAVAL WEAPONS STATION YORKTOWN
SUPPLY CENTER
U.S. COAST GUARD RESERVE TRAINING CENTER
YORKTOWN REFINERY
GOODWIN NECK
Goodwin Neck Estates
Back Creek
Queens Lake
Battle


Light
Outfall 001
Outfall 004
Outfall 102
Outfall 101
Tidal
Flat
YORKTOWN
REFINERY
Back Creek
Park

ATTACHMENT 3

SCHEMATIC/PLANS & SPECS/SITE MAP/ WATER BALANCE



NO.	DESCRIPTION	BY
5	DETAIL DRAWING RELEASE 12/7/95	RHD
1	A.12824 CORRECTED SCALE WAS 1"=20' 5/26/99	RHD
2	A.12824 ASBUILT UP DATE 5/22/98	RHD
3	UPDATE FOR CLARITY 1/1/99	TDV
4	A8824 VIRGINIA POWER 4/15/93	RHD
5	A.12824 ASBUILT UP DATE CLEANING SLAB & TRUCK RACK 10/15/93	RHD
6	A.12824 ASBUILT UP DATE GAS TREATING UNIT & FLARE AREA 3/1/94	RHD
7	A8824 CLEAN FUEL PLANTS 10/13/94	RHD
	A.12824 UP DATE 3/25/95	RHD
8	A8824 RECENT TANKS 109-113 6/15/95	LCH
9	A8824 3-2000 UNIT AND TANKS 623 & 624 6/5/96	RHD
10	A.12824 RELOCATED TANKS 457 & 460, 459 REMOVED 305 5/26/96	LTH
11	A.12824 UP DATE 3-2000 UNIT AND TANKS 623 & 624 12/2/96	RHD
12	3-2000 UNIT REMOVED GAS UNIT	TDV
13	A8824 HEV MC UNIT 5/15/96	RHD
14	A8824 TEMPORARY FIRE STATION 7/8/97	RHD
15	A8824 GRAVEL YARD ON AVE 'B' 7/25/97	RHD
16	A8824 LABORATORY, FIRE STATION & LIFT STA TIE-IN 10/25/97	RHD
17	A8824 STREET CENTERLINES 6/25/98	BRS

100-G-46 MAP FOR FUTURE EXPANSION

AMOCO OIL COMPANY

WESTERN REFINING - YORKTOWN
REFINERY PLOT PLAN
AND MAP

DATE 12/7/95

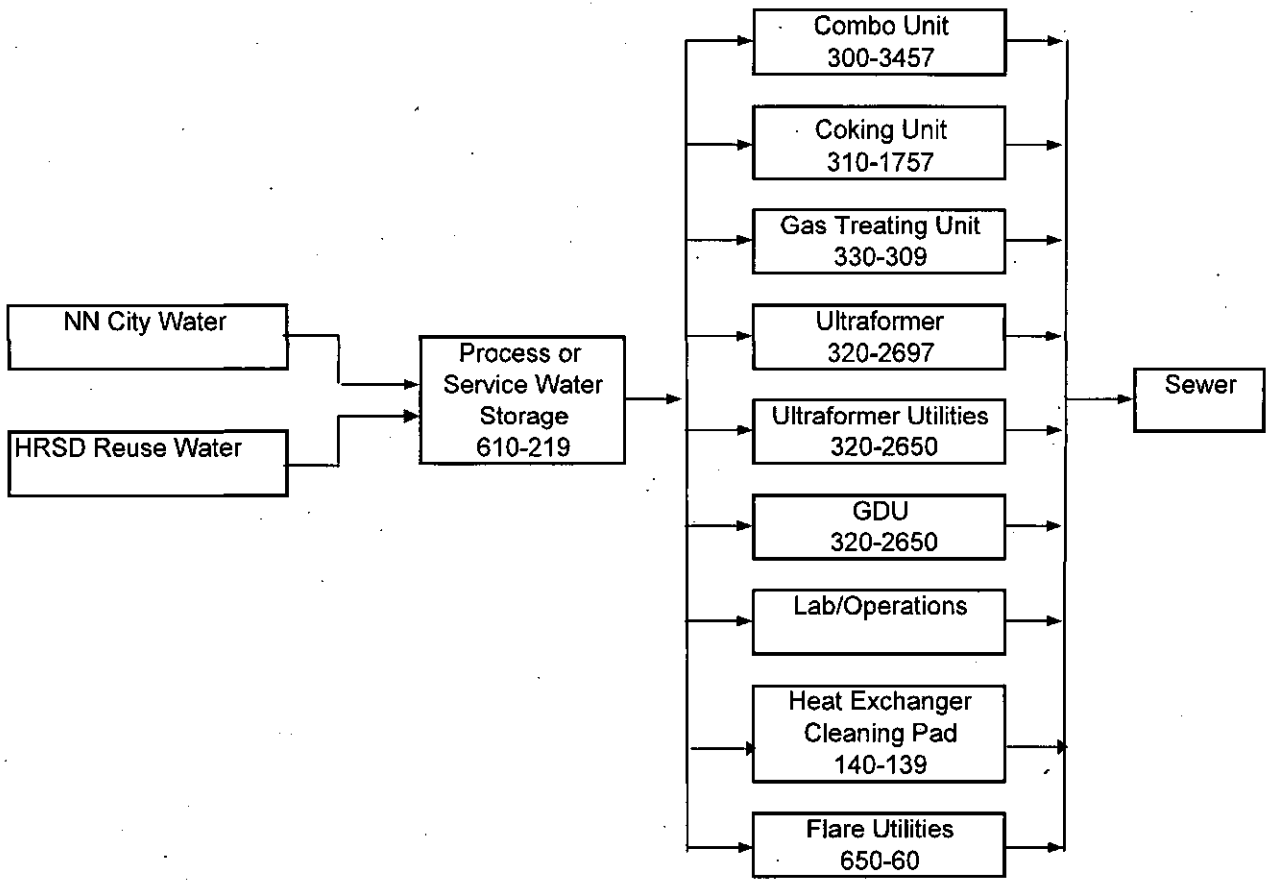
SCALE 1"=360'

B-100-G-32 17

NOTIFY ENGINEERING OF ALL CHANGES

PLOTTING SCALE: 1=4320

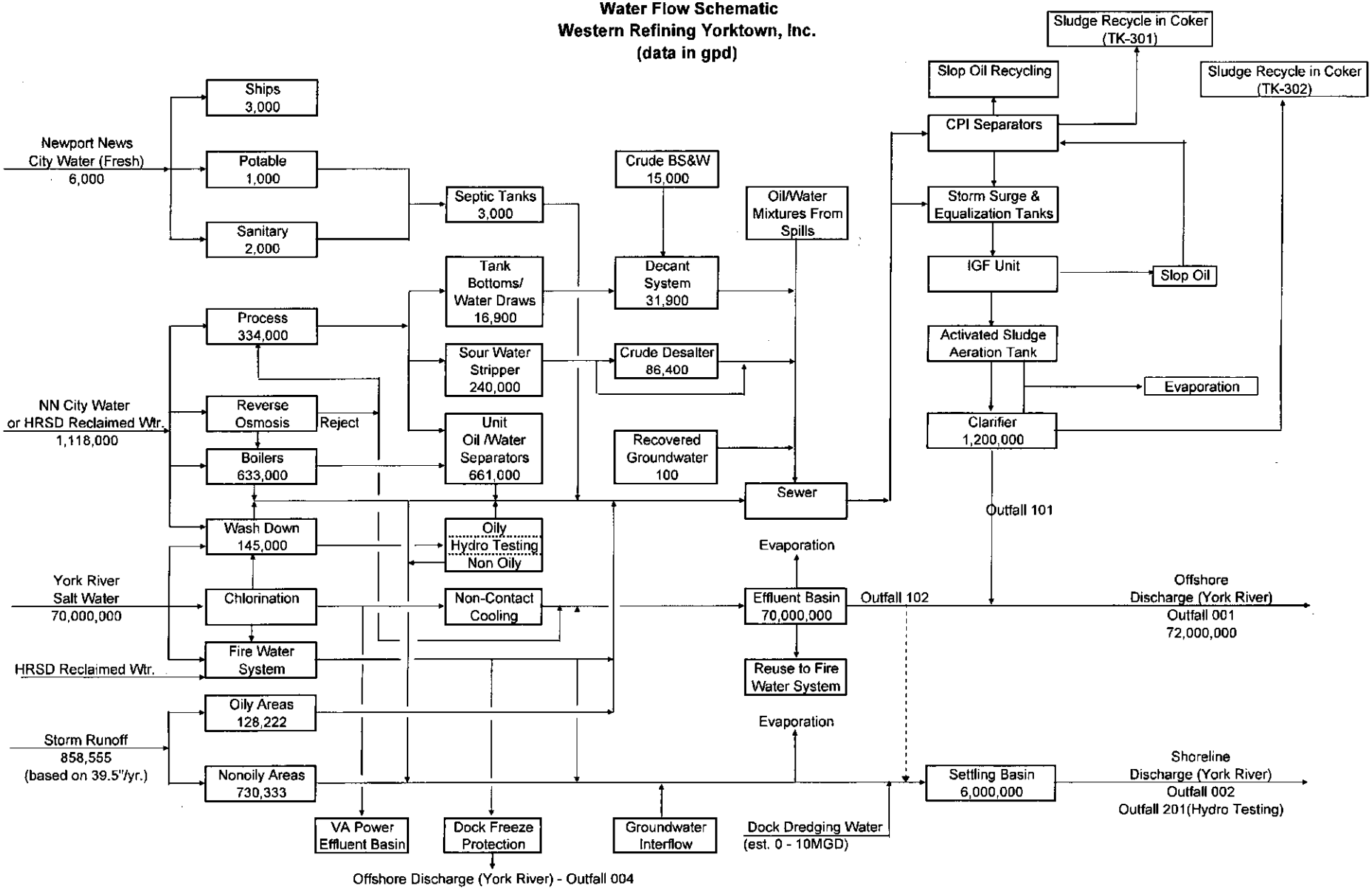
EPA Form 2C - Item IIA-B
Water Flow Schematic
Process Summary
Western Refining Yorktown, Inc.



See following figures for more detail of water flow.

Note: Hyphenated numbers are references to Western Refining Yorktown, Inc. piping and instrument diagrams.

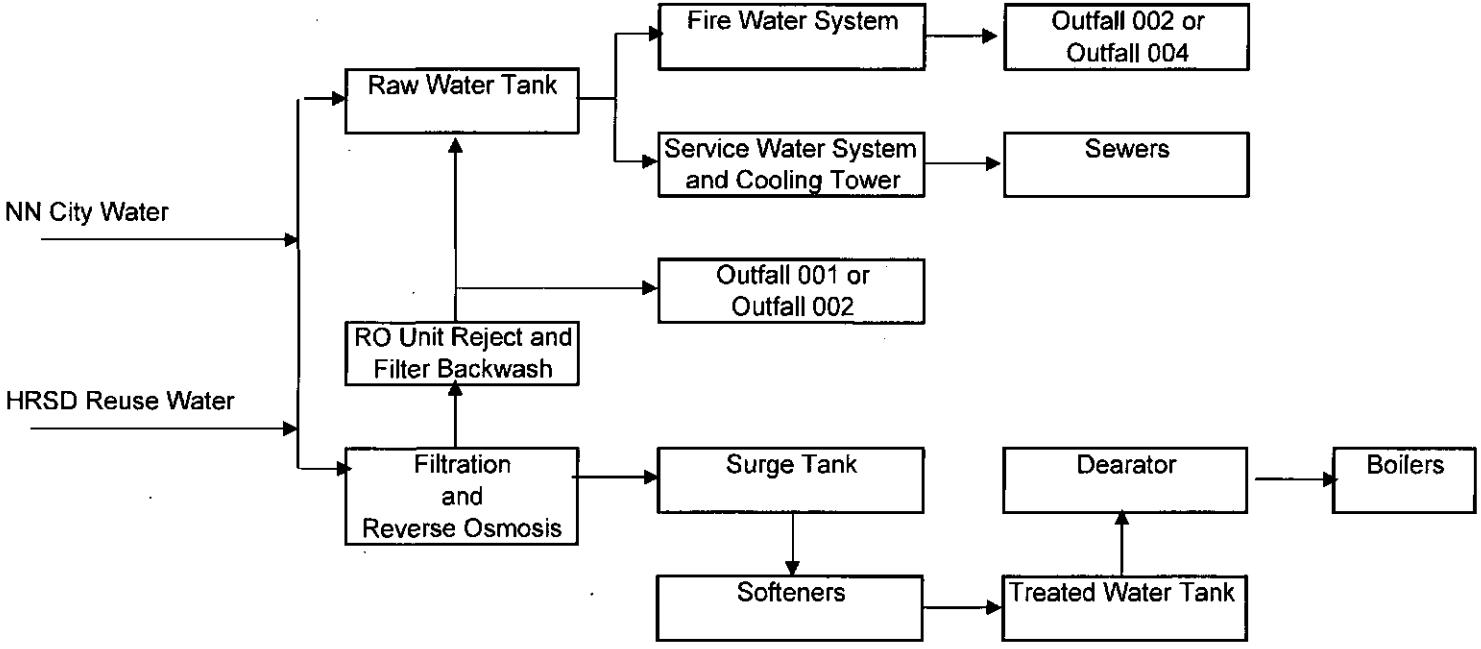
Figure 1
Water Flow Schematic
Western Refining Yorktown, Inc.
(data in gpd)



* See additional drawings for more detail.

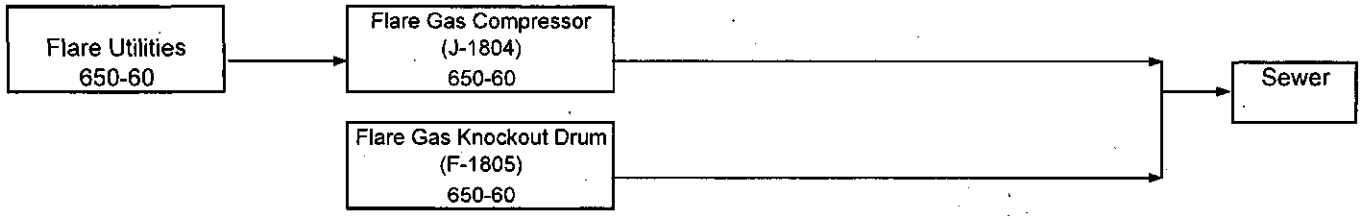
11/16/2009

EPA Form 2C - Item IIA-B
Water Flow Schematic
Boilers
Western Refining Yorktown, Inc.



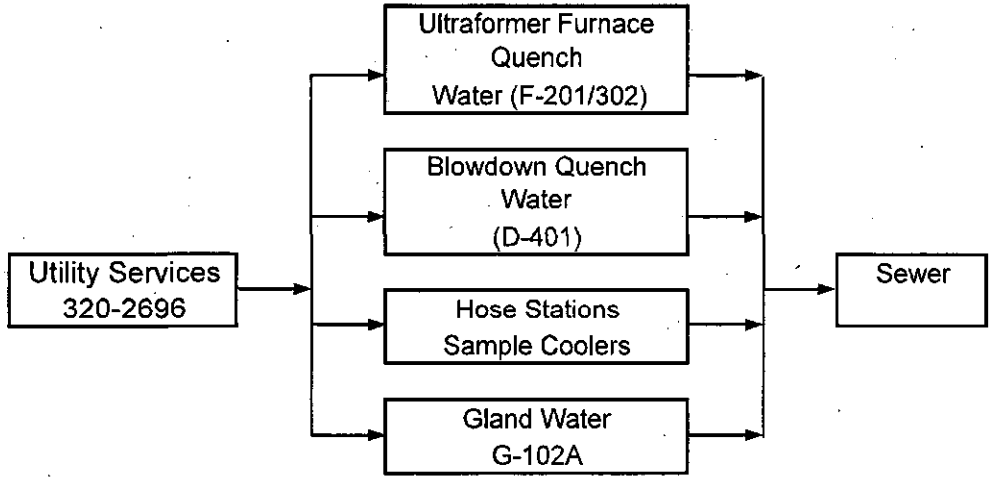
11/16/2009

EPA Form 2C - Item IIA-B
Water Flow Schematic
Flare Utilities
Western Refining Yorktown, Inc.



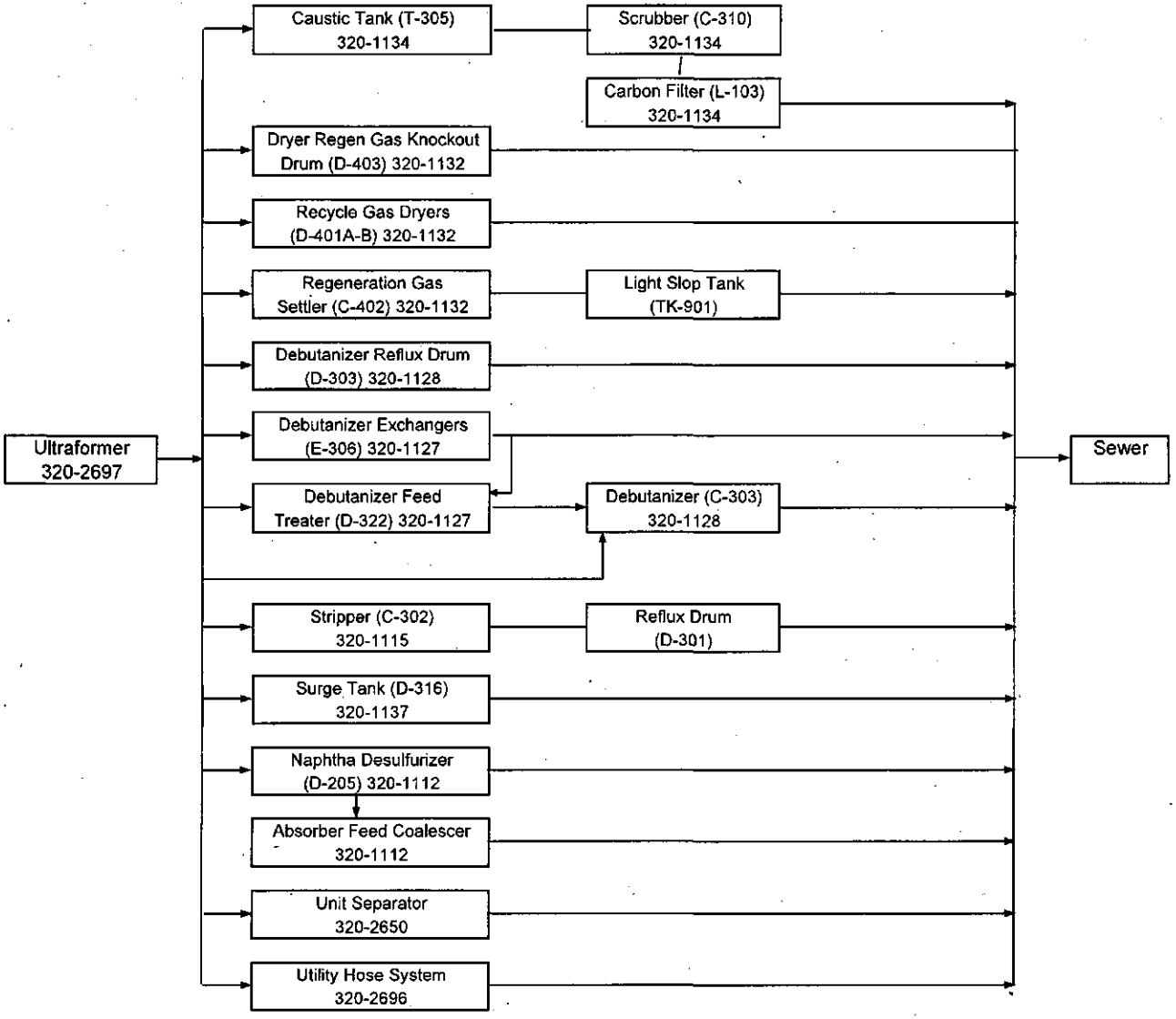
Note: Numbers in parentheses are equipment identification numbers. Hyphenated numbers are references to Western Refining Yorktown, Inc. piping and instrument diagrams.

EPA Form 2C - Item IIA-B
Water Flow Schematic
Ultraformer Utilities
Western Refining Yorktown, Inc.



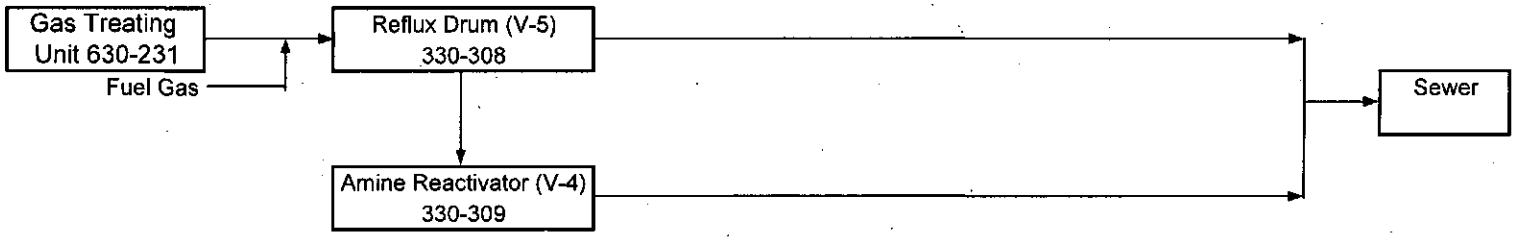
Note: Numbers in parentheses are equipment identification numbers. Hyphenated numbers are references to Western Refining Yorktown, Inc. piping and instrument diagrams.

EPA Form 2C - Item IIA-B
Water Flow Schematic
Ultraformer
Western Refining Yorktown, Inc.



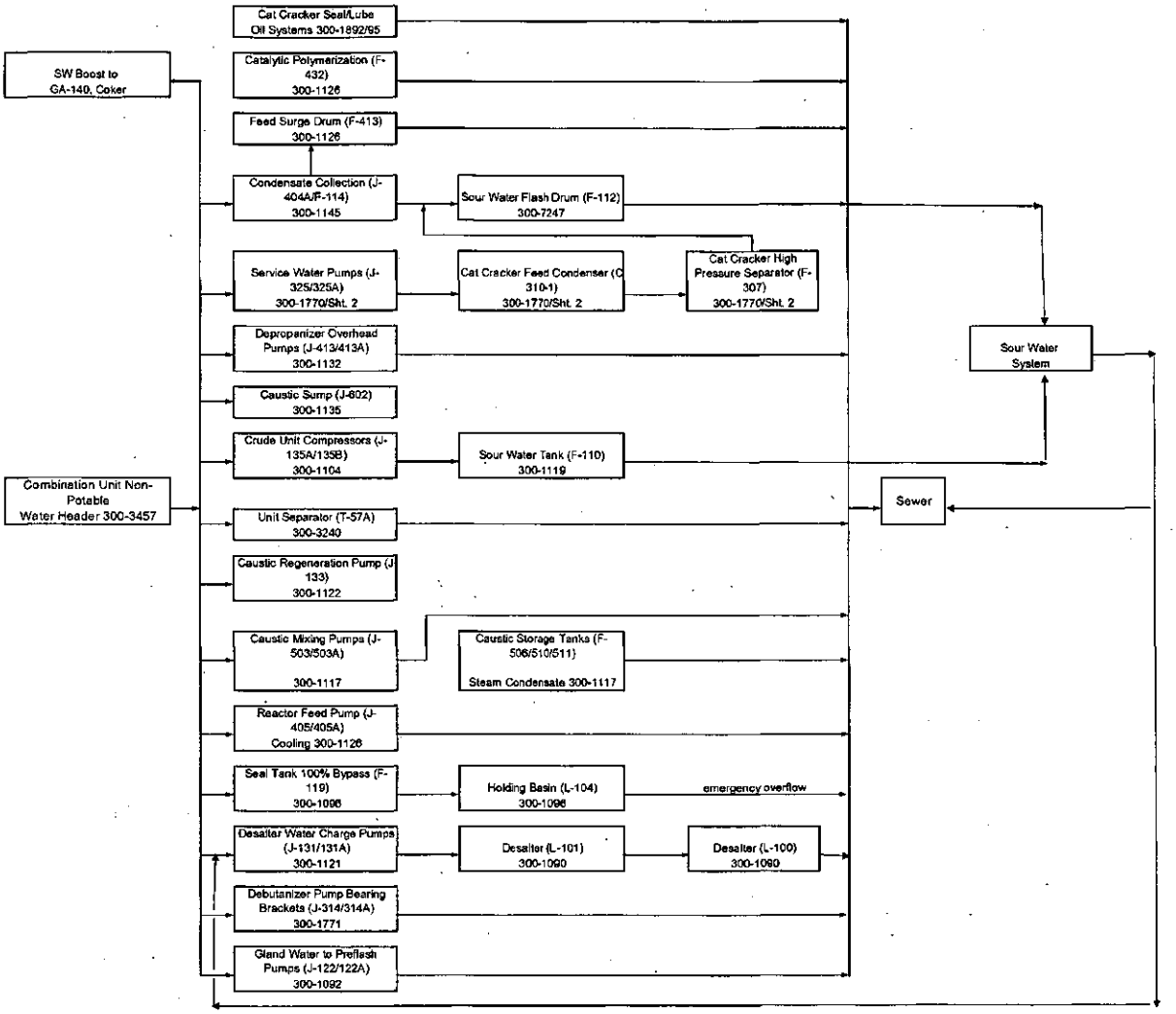
Note: Numbers in parentheses are equipment identification numbers. Hyphenated numbers are references to Western Refining Yorktown, Inc. piping and instrument diagrams.

EPA Form 2C - Items IIA-B
Water Flow Schematic
Gas Treating Unit
Western Refining Yorktown, Inc.



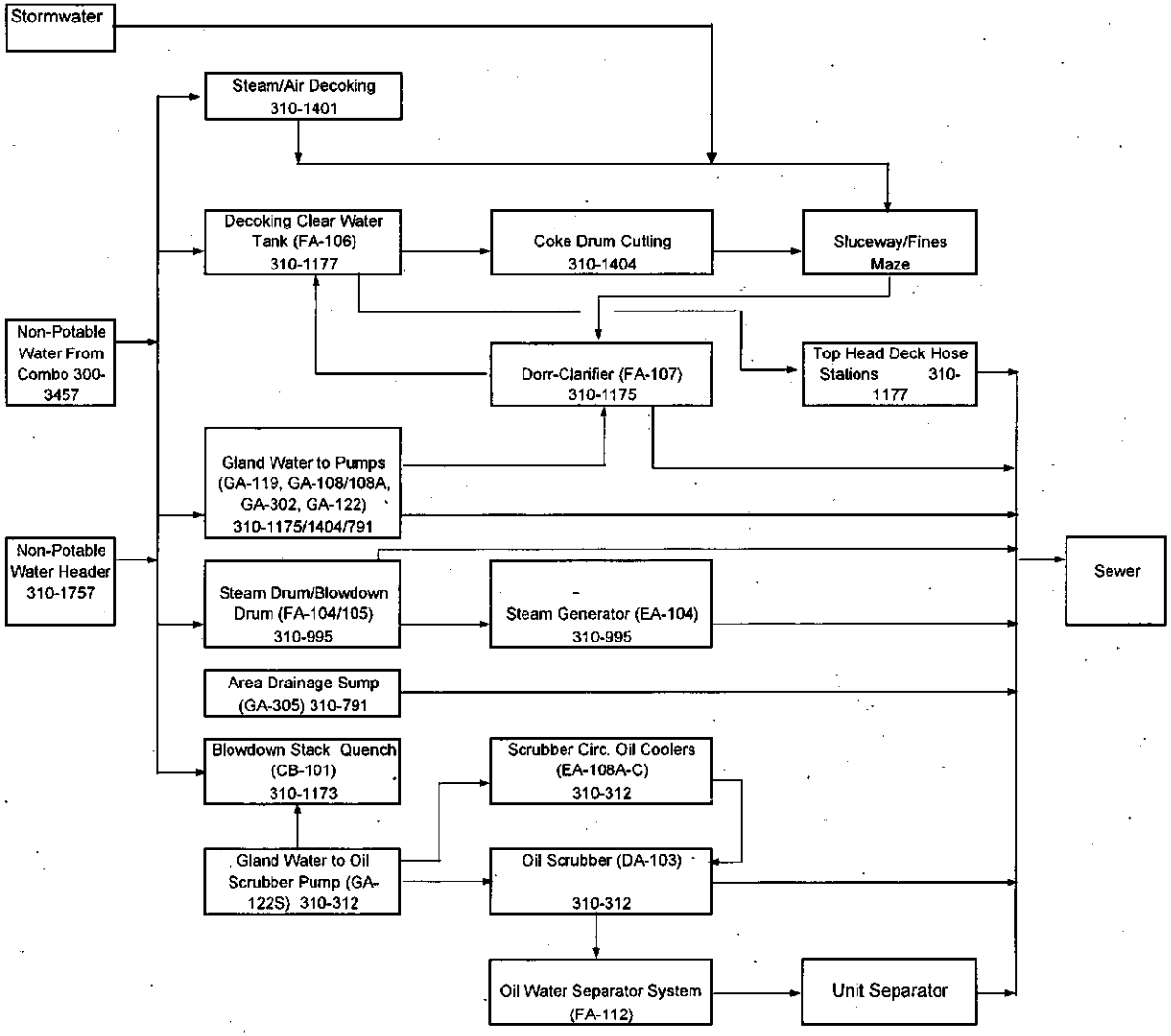
Note: Numbers in parentheses are equipment identification numbers. Hyphenated numbers are references to Western Refining Yorktown, Inc. piping and instrument diagrams.

EPA Form 2C - Items IIA-B
Water Flow Schematic
Combination Unit
Western Refining Yorktown, Inc.



Note: Numbers in parentheses are equipment identification numbers. Hyphenated numbers are references to Western Refining Yorktown, Inc. piping and instrument diagrams.

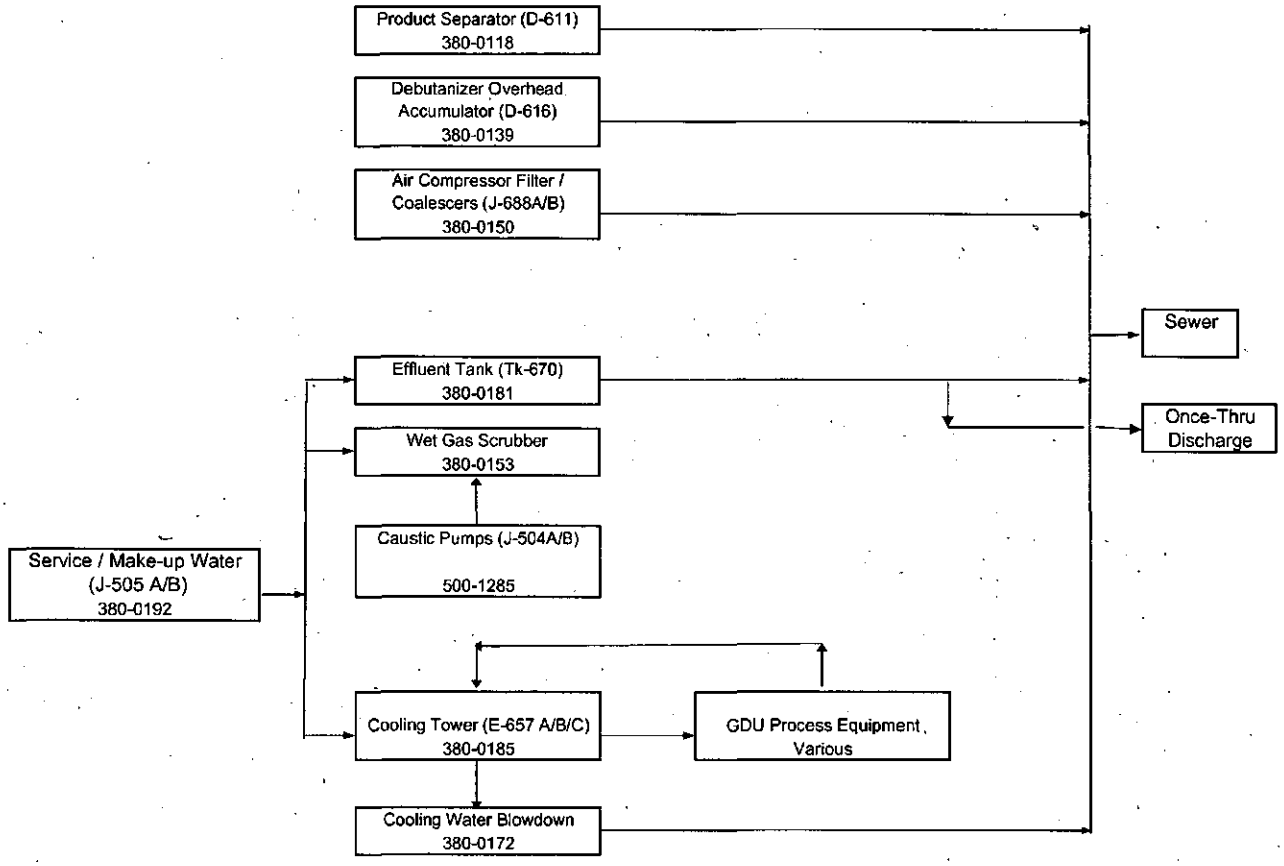
EPA Form 2C - Items II.A-B
Water Flow Schematic
Coking Unit
Western Refining Yorktown, Inc.



Note: Numbers in parentheses are equipment identification numbers. Hyphenated numbers are references to Western Refining Yorktown, Inc. piping and instrument diagrams.

11/16/2009

EPA Form 2C - Items IIA-B
Water Flow Schematic
Gasoline Desulfurizing Unit (GDU)
Western Refining Yorktown, Inc.



Note: Numbers in parentheses are equipment identification numbers. Hyphenated numbers are references to Western Refining Yorktown, Inc. piping and instrument diagrams.

ATTACHMENT 4

TABLE I - DISCHARGE/OUTFALL DESCRIPTION

TABLE I

NUMBER AND DESCRIPTION OF OUTFALLS

OUTFALL NO.	DISCHARGE LOCATION	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	37°13'36" 76°26'18"			72 MGD
101	Internal			1.243 MGD
102	Internal			70 MGD
002 201	37°13'05" 76°26'15"			6.2 MGD
004	37°13'36" 76°26'18"			0.01 MGD

(1) List operations contributing to flow; **See Form 2C-II.B Table Attached**
(2) Give brief description, unit by unit; **See Form 2C-II.B Table Attached**
(3) Give maximum 30-day average flow for industry and design flow for municipal

FORM 2C-II.B Table

1. OUTFALL	2. OPERATIONS CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION	b. AVERAGE FLOW	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
101	Sour process water	0.24 MGD	Ammonia stripping Reuse, sewer CPI separators Storage, equalization Coagulation Induced gas flotation Activated sludge Sedimentation Discharge to surface water	1-A 4-C 1-H 2-D 1-U 3-A 1-U 4-A	 1-U
101	Sweet process water	0.50 MGD	Oil/water separators, sewer CPI separators Storage, equalization Coagulation Induced gas flotation Activated sludge Sedimentation Discharge to surface water	1-H 1-H 2-D 1-U 3-A 1-U 4-A	1-U 1-U
101	Stormwater in oily areas	0.50 MGD	Sewer Screening Storage, equalization Coagulation Induced gas flotation Activated sludge Sedimentation Discharge to surface water	 1-T 2-D 1-U 3-A 1-U 4-A	
101	Sanitary and gray water	0.003 MGD	Sedimentation Sewer Screening Storage, equalization Coagulation Induced gas flotation Activated sludge Sedimentation Discharge to surface water	1-U 1-T 2-D 1-U 3-A 1-U 4-A	
102	Once-through cooling water	70 MGD	Chlorine/ Bromide disinfection Reuse Discharge to surface water	2-F 4-C 4-A	
001	Combined process waste-water and once-through cooling water (Outfalls 101 and 102) and Reverse Osmosis Unit reject stream	72 MGD	Discharge to surface water	4-A	

FORM 2C-II.B Table

1. OUTFALL	2. OPERATIONS CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION	b. AVERAGE FLOW	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
002	Stormwater runoff and once-through cooling and/or process wastewater if diverted from Outfall 102 and/or firewater	6 MGD	Sedimentation Discharge to surface water	1-U 4-A	
004	Firewater flushing and freeze protection	0.01 MGD	Discharge to surface water	4-A	
201	Hydrostatic testing	0.2 MGD	Sedimentation Discharge to surface water	1-U 4-A	

Sour Water Stripper

Tank 700
Capacity: 40,000 barrels (approx.)
Maximum Throughput: 3,650,000 barrel/year

Tower V506
Diameter 4'6"
Avg. Flow 300 gpm or 420,000 gal/day

In most cases, sour water generated at the process units is initially transferred to degassing/ oil separator drums. Sour water from these individual drums throughout the refinery then flows to an equalization tank (tank 700) to provide additional oil/water separation and flow equalization. All sour water is treated at the Sour Water Stripper (V-506). Stripped sour water is either reused at the crude desalters or discharged into the refinery aboveground sewer system for further treatment prior to discharge through Outfall 101.

Heat Exchanger Cleaning Pad

2 ft high concrete curbing on all sides
6 ft high fabricated steel walls on three sides to control spray

On the heat exchanger cleaning pad, high pressure water streams are used to wash out exchangers and other equipment. Water and sludge mixtures from this process flow by gravity to a collection sump, which is then emptied to the sewer.

Decant Tanks

Tank 909
Low, Low Gauge: 4'6"
Low Gauge: 4'8"
Maximum working height: 22'2"
BBLS: 1500
BBLS Per Foot: 68.0

Tank 910
Low, Low Gauge: 4'6"
Low Gauge: 4'8"
Maximum working height: 15'6"
BBLS: 1000
BBLS Per Foot: 65.0

Tank 911
Low, Low Gauge: 4'6"
Low Gauge: 4'8"
Maximum working height: 22'2"
BBLS: 1500
BBLS Per Foot: 45.0

Tank 912

Low, Low Gauge: 4'6"
Low Gauge: 4'8"
Maximum working height: 15'6"
BBLS: 1000
BBLS Per Foot: 65.0

Tank 913

Low, Low Gauge: 4'0"
Low Gauge: 4'2"
Maximum working height: 8'0"
BBLS: 262
BBLS Per Foot: 33.0

Decant tanks receive tank bottoms or water draws and provide a means of (1) controlling air emissions from tank water draws/bottoms, and (2) achieving better separation between tank water draws/bottoms and free hydrocarbons associated with them. Water from the decant system is discharged into the aboveground sewer system; oil, the slop oil system.

Collection Systems

Process Unit Decks

Processing transfer, and storage areas such as the coke yard, process unit decks, and truck loading rack are paved, curbed as required, and provided with drainage to the aboveground or belowground sewer system, whichever is appropriate.

Sandblasting and Spraypainting Booth

A concrete pad with drainage to the belowground sewer system is provided for sandblasting and spraypainting of equipment.

Aboveground Sewer System

This sewer system runs west to east along the south side of Avenue C. It conveys hydrocarbon-containing process wastewater streams such as tank water draws via forced main to the Water Treatment Plant.

Belowground Sewer System and Junction Boxes

This sewer system conveys (1) non-hydrocarbon-containing process wastewater streams, (2) storm water from oily areas, and (3) potable and sanitary wastewater from septic tanks to the Water Treatment Plant.

Thermal Relief Sumps

These sumps collect for reprocessing hydrocarbons from piping relief valve releases.

Wastewater Strainer

The wastewater strainer receives flow from the aboveground and belowground sewer systems and flows to the CPI Separators.

Above Ground Sewer Pressure Control Manifold

This manifold consists of 4 motor operated valves, which open when aboveground sewer pressures are above 34 psi. It controls how many CPI separators are operating at any given moment and diverts wastewater flow from the separators to Tanks 23 and 24 if flows exceed proper operating ranges.

Corrugated Plate Interceptor (CPI) Separators

3 CPI Separators: L-1639, L-1640, and L-1641
- Avg Capacity 1000 gpm each
- Max Capacity 3,750 gpm each
- Length 14'
- Width 9'4"
- Height 13'8"
- Tops are 25' above grade

4th CPI Separator: I-1642
- Avg Capacity 200 gpm
- Max Capacity 800 gpm
- Processes float from Induced Gas Flotation Unit
- Float processed by one of the 1000 gpm separators if L-1642 out of service

CPI separators recover sludge and oil from process wastewater. Recovered oil from the CPI separators overflows into wet oil receiving drum Tank 55, and then is recycled through the slop oil system. Sludge from the CPIs, is normally pumped to sludge Tank 22, then recycled in the Coker under an exemption provided at 40 CFR 261.4(a)(12). A polymer is added to the IGF float at CPI L-1642 to aid removal of floatable solids. These solids are conveyed to Tank 22 or to a container for dewatering prior to being recycled at the Coker. Occasionally, in the event the material cannot be processed at the Coker, CPI sludge may be sent as a hazardous waste to an approved off-site facility.

Tank 55 Wet Oil Receiving Drum

Diameter 6'

This drum is a reservoir for recovered oil from the CPI separators prior to Tanks 907 and 908.

Heavy Slop Oil Tanks 907 and 908

Diameter 30' each
Height 30' each
Volume 159,000 gallons each
Receive wet oil from T-55

These tanks are heated with steam coils, which help water to sink to the bottom, and oil to float. Slop oil from them is pumped to heavy slop tank 900 then recycled.

Sludge Tank 22

This is a holding tank for sludge and sediment from the CPI separators. The contents are taken by vacuum truck to the Sludge Processing Unit hazardous waste sludge tank west of the Coker, then recycled in the Coker.

Wastewater Receiving Tank 54

Diameter 10'
Height 15'
Volume 8,8000 gallons
Cone roof

This tank is located downstream of the CPI separators. It stores CPI separator effluent, which is then pumped to Tanks 23 and 24.

Stormwater Retention Tanks (SWRTs) 23 & 24

Capacity 150,000 BBL or 6.34 million gallons each

The SWRTs provide storm surge storage and flow equalization prior to the IGF and the activated sludge aeration tank. Each SWRT is equipped with oil skimmers.

Induced Gas Flotation Unit (I.G.F.)

1 unit (L-1635) with 4 cells
Avg flow 2,000 gpm
Max flow 2,500 gpm
Length 40'8"
Height 10'8 ½"
Width 11' 11 3/4"
Surface Area 487 ft^2

The IGF further removes oil from the refinery's wastewater. Water from the IGF is pumped to the activated sludge aeration tank. Float is pumped to L-1642 CPI separators.

Activated Sludge Aeration Tank

Diameter 100'
Side Water Depth 20'
Volume 157,000 ft^3 or 1,200,000 gallons
Detention Time
@ Qmax: 10 hours
@ Qave: 24 hours

The activated sludge aeration tank biologically treats refinery wastewater. Mixed liquor is pumped to the clarifier/thickener tank.

Clarifier/Thickener Tank

Diameter 75'
Sidewater Depth 18'6"
Volume 81,730 ft^3 or 611,344 gallons
Detention Time
@Qmax: 5.1 hours
@ Qave: 12 hours

The clarifier separates mixed liquor from the activated sludge aeration tank into sludge and water. Water is recycled or discharged through outfall 101. Sludge is recycled to the activated sludge aeration tank or wasted to the aerobic digester.

Aerobic Digester

Diameter 40'
Volume 25,133 ft^3 or 187,993 gallons

Sludge from the aerobic digester is taken by vacuum truck to the nonhazardous waste sludge tank west of the Coker, then recycled in the Coker.

Storm Water Settling Basin

The storm water settling basin is a quiescent lagoon with a surface area of 5.2 acres. The settling basin is fed by the surface ditch collection system that extends throughout the non-oily areas of the refinery. Both the ditch system and the settling basin are equipped with haybasket filters. The settling basin is also equipped with three sections of oil spill containment boom. This equipment is employed to capture oil and filter out contaminants, which might reach the refinery ditch system in the event of spills. Surface water runoff from non-oily areas, firewater, and/or steam condensate flow through the settling basin and to the York River. In the event of a heat exchanger leak to once-through cooling water occur, once-through cooling water (outfall 102) may routed through the settling basin to prevent oil from reaching the York River until the leak can be isolated and repaired. Outfall 102 may also be diverted to the settling basin if maintenance is required. It is important to note that any such diversion of Outfall 102 to the settling basin does not result in any treatment process by-pass, but rather allow equivalent or additional treatment to occur.

Cooling Water Effluent Basin

The cooling water effluent basin is a 125' x 9' tank through which once-through cooling water passes prior to entering the York River. It is periodically visually inspected for signs of a sheen indicating a potential heat exchanger leak. From the effluent basin, cooling water flows to the York River at the end of the dock. However, if a sheen is detected, the cooling water will be routed through the settling basin to prevent oil from reaching the York River.

Tanks 26 and 27

Tank 26

Diameter 132'
Working Height 7'0"
Capacity 17,000 bbls

Tank 27
Diameter 120'
Working Height 29'0"
Capacity 58,000 bbls

Tank 26 and 27, formerly ballast water tanks are primarily used as flow equalization tanks in the refinery wastewater treatment system. The tanks may be adapted for use as a backup activated sludge aeration tank/clarifier train in the event of an outage at the activated sludge aeration tank or clarifier/thickener. In the event of a major oil spill, these tanks may also be used to receive from barges or trucks water/oil mixtures recovered from within the refinery or from surface waters for free product recovery and treatment.

ATTACHMENT 5

TABLE II - EFFLUENT MONITORING/LIMITATIONS

TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL No.: 001
Outfall Description: Final discharge of treated process and sanitary wastewaters (internal outfall 101), and once-through cooling waters (internal outfall 102)

SIC CODE: 2911

(X) Final Limits ( ) Interim Limits Effective Dates - From: Reissuance Date To: Expiration

PARAMETER & UNITS	BASIS FOR LIMITS	MULTIPLIER OR PRODUCTION	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD)	3		NL	NA	NL	1/Week	EST
pH (S.U.)	3		NA	6.0	9.0	1/Week	GRAB
Total Phosphorus (mg/l) [a]	3		2.0	NA	NL	1/Week	24 Hr. Composite
Fecal Coliform (N/CML) [b]	2		200	NA	NA	2/Month	Grab
Enterococci (N/CML) [c]	2		35	NA	NA	2/Month	Grab

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY
24Hr. Composite = 24-hour composite consisting of grab samples collected at hourly intervals and combined in proportion to flow.
2/Month = Two samples taken during the calendar month, no less than two weeks apart.

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

[a] See Parts I.B.5. and I.B.6. for quantification levels and reporting requirements, respectively.
[b] Fecal Coliform monthly average is calculated as a geometric mean.
[c] Enterococci monthly average is calculated as a geometric mean.

The basis for the limitations codes are:

1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING (CONTINUED)

OUTFALL # 101
Outfall Description: Internal discharge of treated process and sanitary wastewaters, contaminated precipitation runoff from areas associated with refinery operations, and contaminated hydrostatic test waters

SIC CODE: 2911

(x) Final Limits ( ) Interim Limits Effective Dates - From: Reissuance To: Expiration

PARAMETER & UNITS	BASIS FOR LIMITS	MULTIPLIER OR PRODUCTION	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD)	3		NL	NA	NL	Continuous	Totalized and Recorded
pH (S.U.)	1		NA	6.0	9.0	Continuous	Recorded
BOD5 (lbs/d)	1		550	NA	990	1/Week	24 Hr. Composite
TSS (lbs/d)	1		440	NA	690	1/Week	24 Hr. Composite
TOC (lbs/d)	1		1200	NA	2200	1/Week	24 Hr. Composite
Oil & Grease (lbs/d)	1		160	NA	300	1/Week	Grab
Ammonia (as N) (lbs/d)	1		280	NA	620	1/Week	24 Hr. Composite
Total Phenols (lbs/d)	1		3.0	NA	7.4	1/Week	Grab
Sulfide (lbs/d)	1		2.7	NA	6.1	1/Week	Grab

PARAMETER & UNITS	BASIS FOR LIMITS	MULTIPLIER OR PRODUCTION	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
T. Chromium (lbs/d)	1		3.6	NA	10	1/Month	24 Hr. Composite
Hexavalent Chromium (lbs/d)	1		0.31	NA	0.68	1/Month	Grab

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY
24Hr. Composite = 24-hour composite consisting of grab samples collected at hourly intervals and combined in proportion to flow.

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

The basis for the limitations codes are:

1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING (CONTINUED)

OUTFALL # 102
Outfall Description: Internal discharge of once-through cooling water
SIC CODE: 2911

(x) Final Limits ( ) Interim Limits Effective Dates - From: Reissuance To: Expiration

PARAMETER & UNITS	BASIS FOR LIMITS	MULTIPLIER OR PRODUCTION	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD)	3		NL	NA	NL	1/Week	EST
Temperature (°C)	3		NA	NA	44	Continuous	Recorded
Net Total Organic Carbon (mg/l) [a]	3		NA	NA	5.0	1/Week	24 Hr. Composite

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY
I.S. = Immersion Stabilization
24Hr. Composite = 24-hour composite consisting of grab samples collected at hourly intervals and combined in proportion to flow.

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

[a] See Parts I.B.5. and I.B.6. for quantification levels and reporting requirements, respectively.

The basis for the limitations codes are:
1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING (CONTINUED)

OUTFALL # 002

Outfall Description: Precipitation from runoff associated with a regulated industrial activity, diverted flows from Outfalls 101 and/or 102 during necessary site activities, fire main wastewaters, and uncontaminated wastewaters from hydrostatic testing (internal outfall 201)

SIC CODE: 2911

(x) Final Limits ( ) Interim Limits Effective Dates - From: Reissuance To: Expiration

PARAMETER & UNITS	BASIS FOR LIMITS	MULTIPLIER OR PRODUCTION	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD)	3		NL	NA	NL	1/Week	EST
pH (SU)	3		NA	6.0	9.0	1/Week	Grab
Total Organic Carbon (mg/l) [a]	3		NL	NA	35	1/Week	Grab
Oil & Grease (mg/l) [a]	3		NL	NA	15	1/Week	Grab
Temperature (°C)	3		NA	NA	44	Continuous	I.S.
Total Phosphorus (mg/l) [a]	3		2.0	NA	NL	1/Month	Grab
Total Arsenic (µg/l) [a]	3		NL	NA	NL	1/Month	Grab
Total Cadmium (µg/l) [a]	3		NL	NA	NL	1/Month	Grab
Total Chromium (µg/l) [a]	3		NL	NA	NL	1/Month	Grab
Fecal Coliform (N/CML) [b]	2		NL	NA	NA	2/Month	Grab
Enterococci (N/CML) [c]	2		NL	NA	NA	2/Month	Grab

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY
I.S. = Immersion Stabilization
2/Month = Two samples taken during the calendar month, no less than two weeks apart.
24HC = 24-hour composite consisting of grab samples collected at hourly intervals and combined in proportion to flow.

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

[a] See Parts I.B.5. and I.B.6. for quantification levels and reporting requirements, respectively.
[b] Fecal Coliform monthly average is calculated as a geometric mean.
[c] Enterococci monthly average is calculated as a geometric mean.

The basis for the limitations codes are:
1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING (CONTINUED)

OUTFALL # 201
Outfall Description: Discharges of wastewater generated by hydrostatic testing of storage tanks, conveyance piping, and other equipment associated with refinery operations

SIC CODE: 2911

(x) Final Limits ( ) Interim Limits Effective Dates - From: Reissuance To: Expiration

PARAMETER & UNITS	BASIS FOR LIMITS	MULTIPLIER OR PRODUCTION	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS [a]	
			MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD)	3		NA	NA	NL	1/Year	EST
pH (SU)	3		NA	6.0	9.0	1/Year	Grab
Total Petroleum Hydrocarbons (mg/l) [b] [c]	3		NA	NA	15	1/Year	Grab
Benzene (µg/l) [b] [c]	3		NA	NA	50	1/Year	Grab
Toluene (µg/l) [b] [c]	3		NA	NA	175	1/Year	Grab
Ethylbenzene (µg/l) [b] [c]	3		NA	NA	320	1/Year	Grab
Total Xylenes (µg/l) [b] [c]	3		NA	NA	33	1/Year	Grab
Naphthalene (µg/l) [b] [c]	3		NA	NA	10	1/Year	Grab
Total Residual Chlorine (mg/l) [b]	3		NA	NA	NL	1/Year	Grab

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY
1/Year = Between January 1 and December 31.

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

[a] See Part I.B.8. for sampling and monitoring requirements for hydrostatic discharges.
[b] See Parts I.B.5. and I.B.6. for quantification levels and reporting requirements, respectively.

[c] Sampling and reporting required only for wastewater discharges resulting from testing tankage, piping and other equipment associated with the storage of products and feedstocks.

The basis for the limitations codes are:

1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING (CONTINUED)

OUTFALL # 004
Outfall Description: Discharge of wastewater associated with fire main flushing and freeze protection at offshore pier where tank vessels and barges moor during petroleum product transfer activities

SIC CODE: 2911

(x) Final Limits ( ) Interim Limits Effective Dates - From: Reissuance To: Expiration

PARAMETER & UNITS	BASIS FOR LIMITS	MULTIPLIER OR PRODUCTION	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
THIS OUTFALL SHALL CONTAIN ONLY DISCHARGES OF FIRE MAIN FLUSHING WASTEWATERS AND DISCHARGES ASSOCIATED WITH FREEZE PROTECTION AT AREAS ASSOCIATED WITH PIER OPERATIONS. THERE SHALL BE NO DISCHARGE OF REFINERY PROCESS WASTEWATERS FROM THIS SOURCE.							

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

The basis for the limitations codes are:
1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

ATTACHMENT 6

EFFLUENT LIMITATIONS/MONITORING RATIONALE/SUITABLE DATA/ ANTIDEGRADATION/ANTIBACKSLIDING

ATTACHMENT 6

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
RATIONALE & SUITABLE DATA

Outfall 001 (101 and 102), 002 (201), and 004 in VPDES Permit No. VA0003018 are major industrial discharges from the operation of a petroleum refining facility located on the shore of the York River in Yorktown, Virginia. The facility produces gasoline, propane, butane, jet fuels, furnace oils, distillate fuels, petroleum coke and sulfur. The facility operates 24 hours per day, 365 days per year.

The Western Refining, Inc. site sits adjacent to Virginia Power's Yorktown Power Station and Hampton Roads Sanitation District (HRSD) Yorktown municipal wastewater treatment plant. These facilities work together on several levels of operations. Fuel oils utilized by the power station are conveyed via the refinery pier and used for tank vessel mooring. The attendant conveyance piping and manifold systems are maintained by the refinery. In addition, the refinery and the power station both draw York River water from the same intake channel. Finally, the refinery operates with reclaimed and reused waters from HRSD.

The facility discharges at a maximum 30 day average flow rate of 77.45 MGD. The receiving waters, York River, were assigned a Tier 1 classification. In accordance with 9 VAC 25-560-50, the receiving waters were further assigned Class II waters, tidal waters in the Chesapeake Bay and its tidal tributaries.

Outfall 001 consists of the final discharge of treated process and sanitary wastewaters (internal outfall 101), and once-through cooling waters (internal outfall 102). Outfall 002 consists of precipitation from runoff associated with industrial activity, diverted flows from Outfalls 101 and/or 102, fire main wastewaters, and uncontaminated wastewaters from hydrostatic testing (outfall 201). Outfall 004 consists of wastewater associated with fire main flushing and freeze protection at the offshore pier where tank vessels and barges moor during petroleum product transfer activities.

The facility's production capacity is 70 Mbbl (70,000 thousand barrels per day). This was modified from the original application where 72 Mbbl was listed form 2C.III.C.a. (see e-mail 2/4/10). For the purposes of developing effluent limitations based on the guidelines appearing at 40 CFR 419.22, a daily stream value of 70 Mbbl will be used in the calculations. Based on best professional judgment (BPJ) and the applicable guidelines, the required limitations for this categorical industry's process wastewaters are placed on internal outfall 101. The permittee defined their activity as Sub-Part B-Cracking Category of the Federal Effluent Guidelines, 40 CFR Part 419-Petroleum Refining Point Source Category. As in the previous issued permits for this facility, effluent limitations and monitoring requirements will be developed based on these guidelines.

Reclamation and Reuse

The facility incorporates reclamation and reuse waters from the nearby HRSD Yorktown WWTP. This is an existing use prior to the October 2008 Water Reclamation and Reuse Regulation (9 VAC 25-740) and the facility is grandfathered until the use is revised, modified or expanded (9 VAC 25-740-30). Therefore, no new language from this regulation is incorporated into the current permit or fact sheet. However, after reviewing the water flow schematics submitted with Form 2C of this reissuance, all wastewaters come in contact with reclamation and reuse

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

5636 Southern Boulevard
Virginia Beach, VA 23462
www.deq.state.va.us

Robert G. Burnley
Director

Francis L. Daniel
Tidewater Regional Director
(757) 518-2000

October 6, 2003

Mr. David C. Pavlich
Manager, Health, Safety and Environment
Giant Yorktown Refinery
2201 Goodwin Neck Road
Grafton, VA 23692

RE: Approval of Water Reuse and Once-Through Cooling Water Treatment Proposal Concept Engineering Reports – VPDES Permit No. VA0003108

Dear Mr. Pavlich:

We have received the two Concept Engineering Reports referenced above. We reviewed the reports and found them to be acceptable. The CERs are hereby approved.

If you have any questions, please feel free to call me at (757) 518-2147.

Sincerely,

Anhthu Nguyen
Environmental Engineer Sr.

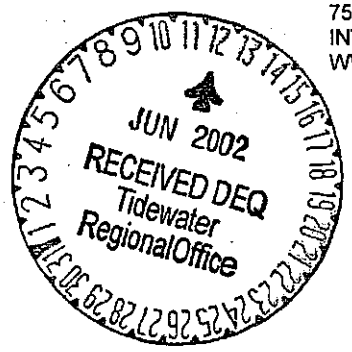
cc: DEQ-TRO file

PGN 33

GIANT YORKTOWN, INC.
P.O. BOX 578
YORKTOWN
VIRGINIA 23690

PHONE
757-898-9700
INTERNET
WWW.GIANT.COM

GIANT
REFINING COMPANY



June 10, 2002

VIA CERTIFIED MAIL

Ms. Anhthu Nguyen
Environmental Engineer
Department of Environmental Quality
Tidewater Regional Office
5636 Southern Boulevard
Virginia Beach, Virginia 23462

Subject: HRSD Reclaimed Water Use Concept Engineering Report (VPDES Permit No. VA0003108)

Dear Ms. Nguyen:

As required by Part I.12 of the refinery VPDES permit, the Giant Yorktown Refinery wishes to submit this concept engineering report addressing a project to enable treated effluent from the Hampton Roads Sanitation District (HRSD) York River Treatment Plant to be substituted for York River water and Newport News Waterworks water used in the refinery's service water and firewater systems. The refinery has historically charged the firewater and service water systems with York River water and fresh Newport News Waterworks (NNW) water, respectively. Reclamation and reuse of HRSD effluent will provide significant water resource stewardship benefits to the Virginia Peninsula by better matching water supplies (reclaimed effluent) with water needs (non-potable industrial uses), and thereby making scarce potable water available for other uses.

Please do not hesitate to contact Peter Buckman at (757) 898-9673 if you should have any questions on this proposal.

Very truly yours,

John J. Stokes
Senior Vice President

cc: D.B. Horne, Virginia Department of Health, Southeast Regional Office

waters and therefore bacteria limits are added to Outfall 001 and bacteria monitoring are added to Outfall 002 based on existing Water Quality Standards.

VPDES General Permit for Nutrient Trading (VAN030047)

In the 2005 reissuance of the permit, nutrient limits and monitoring were added to the refinery's permit for total phosphorus and nitrogen based on the Policy for Nutrient Enriched Waters and because the refinery process does in fact generate compounds that contain these nutrients. In the spring of 2007, the refinery added a sour water stripper to the process operations. Process wastewater flows through the sour water stripper prior to entering the facility's sewer for treatment at the wastewater treatment plant. The sour water stripper was installed in order to assist with nutrient removal from the process wastewater.

Then, in April of 2007 a Board initiated modification reissuance for this facility was developed to further address nutrient reporting and monitoring at outfall 001. Permit regulation 9 VAC 25-820-10 (General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia) became effective November 1, 2006. The regulation governs facilities holding individual permits that discharge total nitrogen or total phosphorus to the Chesapeake Bay and its tributaries.

The modification consisted of removing duplicate mass loading effluent limitations, monitoring and reporting requirements for total nitrogen and total phosphorus that is now permitted under their VPDES General Permit for Nutrient Trading (VAN030047), Outfall 500. The general permit contains a schedule of compliance for the load allocations for Total Nitrogen and Total Phosphorus. The final effluent limits effective date is January 1, 2011. Total Phosphorus monitoring frequency was changed to 1/week from 2/Month at Outfall 001 to reflect the requirements in the nutrient general permit.

However, the total nitrogen monitoring and total phosphorus concentration limitation were not removed at that reissuance due to antibacksliding regulations. Since total nitrogen is not limited, this parameter will be removed from monitoring during this reissuance at Outfall 002; total phosphorus is limited and has to remain at this time.

Corrective Measures Implementation Work Plan (CMI WP)

Form 2C Section IV of the VPDES application requests information regarding any activities on site that may affect the discharge for this facility not otherwise described and the facility enclosed their latest revised CMI WP (included in this attachment. The Resource Conservation and Recovery Act (RCRA) Section 3008(h) CMI Final Administrative Order on Consent (CMI Order) became effective on August 18, 2006. This order is administrated by United States Environmental Protection Agency Region III with the assistance of Virginia DEQ.

The revised CMI WP provides updates to the investigations and corrective actions for impacted media (soil, surface water, and groundwater) on site. Contaminants

of concern were identified as volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), phenols, and heavy metals such as arsenic, chromium, and cadmium. The USEPA determined that remediation was required to address these contaminants. This has been an ongoing project and based on the current project strategy proposed, the remaining construction work will be completed during the term of this permit issuance. The CMI WP proposes the placement of remediation waste in what is called a CAMU (corrective action management unit). CAMU East has already been constructed and CAMU West is in the final design phase. A CAMU enables the use of treatment technologies to enhance the long term effectiveness of remedial action by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU (40 CFR 264.552(c) (6)). The federal regulation further states that risk management activities shall not create unacceptable risks to humans or the environment (40 CFR.264.551(2)(2).

Groundwater monitoring is part of these investigations as well as standard operations of this type of facility. The purge water or recovered groundwater is sent to through the wastewater treatment system. In addition, storm water run off from these areas of impacted media either drain to the wastewater treatment system or to the ditch system then to the storm water settling basin to discharge from Outfall 002. Discharges from these areas are described on the facility's list of significant materials (see Attachment 9 of this document) from Form 2F of the application and the CMI WP.

Based on review of the data submitted with the application and BPJ, the current monitoring parameters and limitations for Outfall 101 are believed protective of water quality and necessary to evaluate the potential impact of the discharges on receiving waters. None of the contaminants of concern were detected at Outfall 101. Outfall 002 is required to monitor for the heavy metals: arsenic, chromium and cadmium. The Storm Water Pollution Prevention Plan will be updated with the information and protective measures put in place concerning the CAMUs as noted in the CMI WP.

Data Review Summary and Changes

The data for the past three years and the analysis submitted with the permit application have been reviewed. The facility complies with all parameters at all outfalls. There are changes to the parameters limitations and monitoring requirements with this reissuance for those effluent limitations calculated using the new production rate on Outfall 101 and bacteria limitations have been placed on Outfall 001 and bacteria monitoring on 002. For specific discussions and rationale please review individual outfall discussions that follow.

Outfall 001

Outfall 001 is permitted for treated process wastewaters, storm water from oily areas of the refinery, steam condensate, recovered groundwater, sanitary/gray wastewaters (internal Outfall 101) and once through, non-contact cooling water (Outfall 102). Each of these internal outfalls is discussed more specifically under a separate heading. In general this outfall is the point where these two internal outfalls commingle and are subsequently discharged to the York River.

ATTACHMENT 6, continued
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
RATIONALE & SUITABLE DATA

The discharge point is a pipe located off-shore beneath the pier and approximately 35 feet down into the York River.

The facility maintains a wastewater treatment system for its process wastewaters, other wastewaters contribute as well. The required limitations for this categorical industry's process wastewaters are placed on internal outfall 101. The permittee's on-site sanitary wastewater is treated at the facility's wastewater treatment plant after it is commingled with the site's process wastewater. Following treatment and release to the conveyance leading to the final discharge from Outfall 001, the discharge from Outfall 101 becomes commingled with the temperature equalized once-through, non-contact cooling water discharge from internal Outfall 102. Outfall 102 is also limited internal to Outfall 001.

Data submitted during the application process for internal Outfall 101 shows there is a contribution of bacteria to the outfall's discharge. Although the contribution is overall a low volume of sanitary wastewaters in comparison to other commingled flows of process wastewaters and contaminated storm water runoff, based on best professional judgment (BPJ), the Water Quality Standards (WQS), and additional monitoring, effluent limitations will be incorporated in to the permit at this reissuance.

At times and to affect repairs to systems internal to the facility and its process operations, wastewaters from both 101 and 102 can be diverted to the site's storm water multi-cell sedimentation basin on a temporary basis.

Flow: There is no limit on flow. Monitoring is 1/Week with monthly average and daily maximum reporting requirements. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is standard for industrial operations and no change from the previous permit.

pH: The minimum limit of 6.0 s.u. and maximum limit of 9.0 s.u. with monitoring 1/Week. This requirement is based on BPJ to protect water quality and is limited by the Water Quality Standards (9 VAC-260-50) for Coastal Waters of the State. These limits and monitoring frequency are standard for industrial operations and no change from the previous permit.

Total Phosphorus: The monthly average limit of 2.0 mg/l with monitoring 1/Week. This is based on antibacksliding regulations, BPJ to protect water quality and is believed necessary to evaluate the potential impact of the discharge on receiving waters since the refinery process would generate compounds that contain phosphorus.

Fecal Coliform: A monthly average limit of 200 n/cml. Monitoring required is a grab sample 2/Month. This is based on Water Quality Standards (9 VAC 25-260-160) and is believed protective of instream standards. Current guidance requires fecal coliform monitoring in salt or transition waters if the discharge is to shellfish waters. BPJ determines that this frequency is adequate to determine compliance with the standard.

Enterococci: A monthly average limit of 35 n/cml. Monitoring required is a grab sample 2/Month. This is based on water quality standards (9 VAC25-260-160).

Outfall 101

This outfall is permitted for storm water from oily areas of the refinery, steam condensate, recovered groundwater, sanitary/gray wastewaters, and treated process wastewaters. The wastewater treatment system consists of both biological and chemical/physical treatment.

All areas of the site that may have storm water in possible contact with hydrocarbons are directed to the wastewater treatment system prior to discharge. These areas include process, distribution, storage and CMI areas. Contaminated runoff is collected and diverted to aboveground storage tanks the wastewater treatment system then commingled with the process wastewater during treatment. In the applicable FEG, under 40 CFR 419.20 for SubPart B (cracking), additional pollutant loading allowances are provided in those cases where the permittee treats contaminated precipitation runoff in addition to process wastewater generated at the same facility. These are included in the final effluent limitations.

Sanitary wastewaters are treated on site in the existing process wastewater treatment system. The total flow into the system is 0.003 MGD (Outfall 101). The wastewaters are directed to septic tanks then in to the combined sewer system leading to the treatment plant for treatment prior to discharge. Prior to release from the facility, the treated process/sanitary wastewaters are commingled with the once-through cooling water treated with a form of chlorine used to control bio-fouling of the distribution system throughout the facility's process operations.

Finally, process wastewaters are collected and treated through the on site wastewater treatment system. The required limitations for the categorical process wastewaters are placed on this outfall. Limitations are based on calculations using the facility's production capacity of 70 Mbbl (stream-day value/Feedstock Rate) and the Federal Effluent Guidelines (FEG) found at 40 CFR

Part 419 - Petroleum Refining Point Source Category. The permittee defined their specific activity in the application as that defined in SubPart B of those guidelines - Cracking Subcategory. Therefore the provisions and limitations set forth in 40 CFR 419.22 and related sections were employed to develop Part I.A effluent limitations and monitoring requirements for Outfall 101 as displayed below:

Flow: There is no limit on flow. Monitoring is continuous with monthly average and daily maximum reporting requirements. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is standard for industrial operations and no change from the previous permit.

pH: The minimum limit is 6.0 s.u. and the maximum limit is 9.0 s.u. with continuous monitoring requirements. This requirement is based on FEG (40 CFR 419) and the Water Quality Standards (9 VAC-260-50) to protect the Coastal Waters of the State. These limits and monitoring frequency are standard for industrial operations and no change from the previous permit.

BOD_5: The monthly average limit is 550 lbs/day and the daily maximum limit is 990 lbs/day with monitoring using 24 hour composite 1/Week. This is a technology limit from the FEG based on BPT.

TSS: The monthly average limit is 440 lbs/day and the daily maximum limit is 690 lbs/day with monitoring using 24 hour composite 1/Week. This is a technology limit from the FEG based on BPT.

TOC: The monthly average limit is 1200 lbs/day and the daily maximum limit is 2200 lbs/day with monitoring using 24 hour composite 1/Week. This is a technology limit from the FEG based on BPT.

O & G: The monthly average limit is 160 lbs/day and the daily maximum limit is 300 lbs/day with monitoring using grab sample 1/Week. This is a technology limit from the FEG based on BPT.

Ammonia (as N): The monthly average limit is 280 lbs/day and the daily maximum limit is 620 lbs/day with monitoring using 24 hour composite 1/Week. This is a technology limit from the FEG based on BPT.

Total Phenols: The monthly average limit is 3.0 lbs/day and the daily maximum limit is 7.4 with monitoring using grab sample 1/Week. This is a technology limit from the FEG based on BPT for the daily maximum and based on BAT for the monthly average.

Sulfide: The monthly average limit is 2.7 lbs/day and the daily maximum limit is 6.1 lbs/day with monitoring using 24 hour composite 1/Week. This is a technology limit from the FEG based on BPT.

Total Chromium: The monthly average limit is 3.6 lbs/day and the daily maximum limit is 10 lbs/day with monitoring using 24 hour composite 1/Month. This is a technology limit from the FEG based on BAT.

Hexavalent Chromium: The monthly average limit is 0.31 lbs/day and the daily maximum limit is 0.68 lbs/day with monitoring using grab sample 1/Month. This is a technology limit from the FEG based on BAT.

Outfall 101 PARAMETER-SPECIFIC CALCULATIONS FOR PROCESS WASTEWATERS:

Effluent limitations are initially developed considering a site's production size and process configuration and their capability to make any of five discrete products under the category. These factors appear as numeric values which are applied to development of effluent limitations.

The table found at 40 CFR 419.22(b)(1) yields: Factor a stream-day feedstock value of 70 Mbbls (70,000bbls), a Size Factor (SF) value of 1.04 is applicable for use in the development of the effluent limitations.

The table below was developed to identify the value that is used to determine the Process Factor (PF). The Feedstock Capacities were provided by the permittee in an e-mail dated February 4, 2010.

PROCESS	FEEDSTOCK CAPACITY (1000 BBL/STREAM DAY)	RELATIVE CAPACITY	WEIGHT FACTOR 40CFR419.42(B)(3)	PROCESS CONFIGURATION
CRUDE DISTILLATION	70.0	1.00 (70/70 = 1)		
VACUUM TOWER	50.0	0.71 (50/70 = 0.59)	1	**2.71**
CRUDE DESALTER	70.0	1.00 (70/70 = 1)		(2.71 x 1 = 2.71)
CRUDE PROCESSES TOTAL	**190.0**	**2.71**		
FLUID CATALYTIC CRACKING (FCCU)	29.4	0.42 (29.4/70 = 0.42)	6	**4.5**
DELAYED COKING	23.0	0.33 (23/70 = 0.328)		(0.75 x 6 = 4.50)
CRACKING/COKING PROCESSES TOTAL	**52.4**	**0.75**		
TOTAL				**7.21**

The process configuration value of 7.21 was used to determine the process factor from the table found at 40 CFR 419.22(b) (2). The PF value of 1.29 is applicable for use in the development of the effluent limitations.

Within the Cracking Subcategory, there are five permitting schemes - best practicable pollution control technology (BPT), best available pollution control technology (BAT), best conventional pollution control technology (BCT),

pretreatment standards, and new source performance standards (NSPS). For this facility the latter two regulatory schemes are not applicable as the discharges from this facility are treated on site at the facility and not directed to an off site local municipal treatment facility where pretreatment is required. The facility has existed for several decades and is not considered a new source.

The FEG requires a comparison between process wastewater limitations as calculated for the applicable permitting schemes, BPT, BAT, and BCT where the most stringent shall be utilized for calculating the final effluent limitations. The limitations for BPT, BAT, and BCT are found in 40 CFR 419.20, see Table A.

Biochemical Oxygen Demand (5-day)

This parameter is limited per the FEG. Of the three relevant permitting schemes, BOD_5 limits are proposed for both BPT (419.22) and BCT (419.24). The limitations are to be expressed as pounds per 1,000 bbl of feedstock (Mbbl) and developed considering both the Size and Process Factors.

Per BPT

BOD_5 daily max. = 9.9 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **929.73 #/day**
BOD_5 30-day avg. = 5.5 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF)) = **516.52 #/30-day**

Per BAT

No limitations for BOD_5 expressed as BAT.

Per BCT

BPT = BCT.

Total Suspended Solids

This parameter is limited per the FEG. Of the three relevant permitting schemes, TSS limits are proposed for both BPT and BCT. The limitations are to be expressed as pounds per 1,000 bbl of feedstock and developed considering both the Size and Process Factors.

Per BPT

TSS daily max. = 6.9 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **647.99 #/day**
TSS 30-day avg. = 4.4 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **413.21 #/30-day**

Per BAT

No limitations for TSS expressed as BAT.

Per BCT

BPT = BCT.

Total Organic Carbon

Based on a previous discussion regarding this limiting parameter, it has been determined that the parameter total organic carbon will replace COD as a limiting parameter for Part I.A. of the permit. The limit for TOC will be calculated based on a ratio of 2.2:1 with the applicable BOD_5 limitation.

Per BPT

TOC daily max. = BOD_5 x 2.2 = 9.9 #/Mbbl x 2.2 = 21.78 #/day
TOC 30-day avg. = BOD_5 x 2.2 = 5.5 #/Mbbl x 2.2 = 12.10 #/day

therefore,

TOC daily max. = 21.78 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **2045.40 #/day**
TOC 30-day avg. = 12.10 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF)) = **1136.34 #/30-day**

Per BAT

COD limitations are provided in this category without accompanying BOD_5 limitations. The allowances of the TOC replacement parameter are provided. Based on a BPJ determination, the BOD_5 BPT/BCT limits will be used for this purpose.

BPT/BCT = BAT

Per BCT

There are no BCT COD limitations set forth in this section.

Oil & Grease

This parameter is limited per the FEG. Of the three relevant permitting schemes, O&G limits are proposed for both BPT and BCT. The limitations are to be expressed as pounds per 1,000 bbl of feedstock and developed considering both the Size and Process Factors.

Per BPT

O&G daily max. = 3.0 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **281.74 #/day**
O&G 30-day avg. = 1.6 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF)) = **150.26 #/30-day**

Per BAT

No limitations for O&G expressed as BAT.

Per BCT

BPT = BCT.

Ammonia (as nitrogen)

This parameter is limited per the FEG. Of the three relevant permitting schemes, NH3-N limits are proposed for both BPT and BAT (419.23). The limitations are to be expressed as pounds per 1,000 bbl of feedstock and developed considering both the Size and Process Factors.

Per BPT

NH3-N daily max. = 6.6 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **619.82 #/day**

NH3-N 30-day avg. = 3.0 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **281.74 #/30-day**

Per BAT

BPT = BAT.

Per BCT

No limitations for NH3-N expressed as BCT.

Sulfide

This parameter is limited per the FEG. Of the three relevant permitting schemes, sulfide limits are proposed for both BPT and BCT. The limitations are to be expressed as pounds per 1,000 bbl of feedstock and developed considering both the Size and Process Factors.

Per BPT

Sulfide daily max. = 0.065 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **6.10 #/day**
Sulfide 30-day avg. = 0.029 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **2.72 #/30-day**

Per BAT

BPT = BAT.

Per BCT

No limitations for sulfide expressed as BCT.

Phenolic Compounds (Total Phenols), Total Chromium, Hexavalent Chromium

Both BPT and BAT limitations are applicable for each of these parameters. For BAT limits' development, a specialized approach is required and will be detailed separately, Table B. Under BPT, non-process specific limitations are provided for each of these limiting parameters. Under BAT, the FEG provide different allowances for each of the internal refining processes known to exist at a particular refinery. The most stringent of the calculated limits shall be utilized as the limiting value for each of these three parameters.

Total Phenols (phenolic compounds)

This parameter is limited per the FEG. Of the three relevant permitting schemes, total phenols limits are proposed for both BPT and BAT. The limitations are to be expressed as pounds per 1,000 bbl of feedstock and developed considering both the Size and Process Factors.

Per BPT

TPhenols daily max. = 0.074 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **6.95 #/day**
TPhenols 30-day avg. = 0.036 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **3.38 #/30-day**

Per BAT - Refer to Table B for detailed calculations required under BAT.

Per the allowances provided under BAT, the calculated limitations are:

TPhenols daily maximum = 11.73 #/day
TPhenols 30-day average = 2.84 #/30-day

Per BCT

No limitations for total phenols expressed as BCT.

Determination(s)

The TPhenols daily maximum BPT limitation is more stringent (6.35 #/day) than the calculated BAT limit (11.73 #/day). It is a BPJ determination that the BPT daily maximum limitation **(6.95 #/day)** be used as a limiting value.

The TPhenols 30-day average BAT limitation (2.84 #/30-day) is more stringent than the BPT limit (3.28 #/30-day). It is a BPJ determination that the calculated BAT 30-day average limitation **(2.84 #/30-day)** be used as a limiting value.

Total Chromium

This parameter is limited per the FEG. Of the three relevant permitting schemes, total chromium limits are proposed for both BPT and BAT. The limitations are to be expressed as pounds per 1,000 bbl of feedstock and developed considering both the Size and Process Factors.

Per BPT

TCr daily max. = 0.15 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **14.09 #/day**
TCr 30-day avg. = 0.088 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **8.26 #/30-day**

Per BAT - Refer to Table B for detailed calculations required under BAT

Per the allowances provided under BAT, the calculated limitations are:

TCr daily maximum = 9.59 #/day
TCr 30-day average = 3.35 #/30-day

Per BCT

No limitations for TCr expressed as BCT.

Determination(s)

The TCr daily maximum calculated BAT limitation is more stringent (9.59 #/day) than the BPT limit (14.09 #/day). It is a BPJ determination that the BPT daily maximum limitation **(9.59 #/day)** be used as a limiting value.

The TCr 30-day average calculated BAT limitation (3.35 #/30-day) is more stringent than the BPT limit (8.26 #/30-day). It is a BPJ determination that the calculated BAT 30-day average limitation **(3.35 #/30-day)** be used as a limiting value.

Hexavalent Chromium

This parameter is limited per the FEG. Of the three relevant permitting schemes, HexCr limits are proposed for both BPT and BAT. The limitations are to be expressed as pounds per 1,000 bbl of feedstock and developed considering both the Size and Process Factors described elsewhere in this attachment, and other site specific considerations if appropriate.

Per BPT

HexCr daily max. = 0.012 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **1.13 #/day**
TCr 30-day avg. = 0.0056 #/Mbbl x 70 Mbbl x 1.04 (SF) x 1.29 (PF) = **0.53 #/30-day**

Per BAT - Refer to Table B for detailed calculations required under BAT

Per the allowances provided under BAT, the calculated limitations are:

HexCr daily maximum = 0.61 #/day
HexCr 30-day average = 0.28 #/30-day

Per BCT

No limitations for HexCr expressed as BCT.

Determination(s)

The HexCr daily maximum calculated BAT limitation is more stringent (0.61 #/day) than the BPT limit (1.13 #/day). It is a BPJ determination that the BPT daily maximum limitation **(0.61 #/day)** be used as a limiting value.

The HexCr 30-day average calculated BAT limitation (0.28 #/30-day) is more stringent than the BPT limit (0.53 #/30-day). It is a BPJ determination that the calculated BAT 30-day average limitation **(0.28 #/30-day)** be used as a limiting value.

Outfall 101 PARAMETER SPECIFIC CALCULATIONS FOR CONTAMINATED STORM WATER RUNOFF:

As part of the FEG, under 40 CFR 419.20 for SubPart B (cracking), additional pollutant loading allowances are provided in those cases where the permittee treats contaminated precipitation runoff in addition to process wastewaters generated at the same facility.

A summary of the different permitting schemes (BPT/BAT/BCT) appears in Table C to this attachment.

From the information in Table C the following determinations have been made for the parameters noted below:

BOD_5

BPT daily max. and 30-day avg. limits = BCT daily max. and 30-day avg. limits.
There are no BOD_5 limits provided for contaminated runoff under BAT.

TSS

BPT daily max. and 30-day avg. limits = BCT daily max. and 30-day avg. limits.
There are no TSS limits provided for contaminated runoff under BAT.

O&G

BPT daily max. and 30-day avg. limits = BCT daily max. and 30-day avg. limits.
There are no O&G limits provided for contaminated runoff under BAT.

Sulfide and NH3-N

There are no additional pollutant loadings provided under BPT, BAT or BCT of the applicable FEG for these parameters.

Total Phenols (phenolic compounds) **& TOC**

BPT daily max. and 30-day avg. limits = BAT daily max. and 30-day avg. limits.
There are no TPhenols limits provided for contaminated runoff under BCT.

Hexavalent Chromium

BPT daily max. and 30-day avg. limits = BAT daily max. and 30-day avg. limits.
There are no TPhenols limits provided for contaminated runoff under BCT.

Total Chromium

BPT daily max. and 30-day avg. limits are less stringent than the BAT daily max. and 30-day avg. limits.

In this case, the BAT additional pollutant loading allowances will be carried forward for use in permit limit development for total chromium.

There are no TCr limits provided for contaminated runoff under BCT.

The additional pollutant loading allowances for contaminated runoff are developed based on the calculations appearing below. No up-to-date value was provided and the information in the application was copied from previous applications therefore, the amended value applied during the previous reissuance will be applied for these calculations. The contaminated precipitation runoff is 141,207 gallons per day.

The necessary calculations utilize this value of flow, and the BPT, BAT or BCT daily maximum and 30-day average limitations to develop a loading that will be added to the loadings allowed for process wastewater on a parameter-specific basis.

Once the process wastewater and contaminated runoff allowances (below) are summed, this total pollutant-specific loading will be the final effluent limitations for outfall 101.

Documented flow of contaminated precipitation runoff = 141,207 gpd.

Additional loading = flow (as 1000 gal/day) X BPT or BAT, or BCT allowance

BOD_5
Daily maximum allowance = 141.207 gpd X 0.40 #/1,000 gpd = **56.48 #/day**
30-day average allowance = 141.207 gpd X 0.22 #/1,000 gpd = **31.06 #/30-day**

TSS
Daily maximum allowance = 141.207 gpd X 0.28 #/1,000 gpd = **39.54 #/day**
30-day average allowance = 141.207 gpd X 0.18 #/1,000 gpd = **25.42 #/30-day**

O&G
Daily maximum allowance = 141.207 gpd X 0.13 #/1,000 gpd = **18.36 #/day**
30-day average allowance = 141.207 gpd X 0.067 #/1,000 gpd = **9.46 #/30-day**

TOC
Daily maximum allowance = 141.207 gpd X 0.88 #/1,000 gpd = **124.26 #/day**
30-day average allowance = 141.207 gpd X 0.48 #/1,000 gpd = **67.78 #/30-day**

Total Phenols (phenolic compounds)
Daily maximum allowance = 141.207 gpd X 0.0029 #/1,000 gpd = **0.41 #/day**
30-day average allowance = 141.207 gpd X 0.0014 #/1,000 gpd = **0.20 #/30-day**

Hexavalent Chromium
Daily maximum allowance = 141.207 gpd X 0.00052 #/1,000 gpd = **0.07 #/day**
30-day average allowance = 141.207 gpd X 0.00023 #/1,000 gpd = **0.03 #/30-day**

Total Chromium
Daily maximum allowance = 141.207 gpd X 0.0050 #/1,000 gpd = **0.71 #/day**
30-day average allowance = 141.207 gpd X 0.0018 #/1,000 gpd = **0.25 #/30-day**

Summary of Tables:

Table A: From FEG BPT, BAT, and BCT effluent limitations for calculating process wastewaters,
Table B: Summary of process wastewater calculations for Total Phenols, Total Chromium, and Hexavalent Chromium based on feedstock capacity for each refinery process per BAT
Table C: From FEG for use in calculating contaminated storm water run off for BPT, BAT, and BCT
Table D1: Comparison Chart for most suitable limitations for process wastewaters
Table D2: Comparison Chart for most suitable limitations for contaminated storm water run off
Table E: Summation of Process and Run off allowances for final effluent limitations

SIC Description for 2911

Description for 2911: Petroleum Refining

Division D: Manufacturing
Major Group 29: Petroleum Refining And Related Industries

Industry Group 291: Petroleum Refining

2911 Petroleum Refining

Establishments primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, and lubricants, through fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes. Establishments of this industry also produce aliphatic and aromatic chemicals as by-products. Establishments primarily engaged in producing natural gasoline from natural gas are classified in mining industries. Those manufacturing lubricating oils and greases by blending and compounding purchased materials are included in Industry 2992. Establishments primarily re-refining used lubricating oils are classified in Industry 2992. Establishments primarily engaged in manufacturing cyclic and acyclic organic chemicals are classified in Major Group 28.

- Acid oil, produced in petroleum refineries
- Alkylates, produced in petroleum refineries
- Aromatic chemicals, made in petroleum refineries
- Asphalt and asphaltic materials: liquid and solid produced in
- Benzene, produced in petroleum refineries
- Butadiene, produced in petroleum refineries
- Butylene, produced in petroleum refineries
- Coke, petroleum produced in petroleum refineries
- Ethylene, produced in petroleum refineries
- Fractionation products of crude petroleum, produced in petroleum
- Gas, refinery or still oil produced in petroleum refineries
- Gases, liquefied petroleum produced in petroleum refineries
- Gasoline blending plants
- Gasoline, except natural gasoline
- Greases, lubricating: produced in petroleum refineries
- Hydrocarbon fluid, produced in petroleum refineries
- Jet fuels
- Kerosene
- Mineral jelly, produced in petroleum refineries
- Mineral oils, natural: produced in petroleum refineries
- Mineral waxes, natural: produced in petroleum refineries
- Naphtha, produced in petroleum refineries
- Naphthenic acids, produced in petroleum refineries
- Oils, partly refined sold for rerunning produced in petroleum
- Oils fuel, lubricating, and illuminating produced in petroleum
- Paraffin wax, produced in petroleum refineries
- Petrolatums, produced in petroleum refineries
- Petroleum refining

- Propylene, produced in petroleum refineries
- Road materials, bituminous: produced in petroleum refineries
- Road oils, produced in petroleum refineries
- Solvents, produced in petroleum refineries
- Tar or residuum, produced in petroleum refineries

[SIC Search | Division Structure | Major Group Structure | OSHA Standards Cited]

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Occupational Safety & Health Administration
200 Constitution Avenue, NW
Washington, DC 20210

Woodruff, Melinda (DEQ)

From: Kelley, Jane [Jane.Kelley@wnr.com]
Sent: Thursday, February 04, 2010 3:31 PM
To: Woodruff, Melinda (DEQ)
Subject: Stream Day / Calendar Day Info for VPDES PermitDEQ Permit

Melinda,

Am working on collating the answers to your various questions from our Dec. meeting, but since you indicated this data was your most pressing need, am going ahead and forwarding this to you separately.

Unit	2009 Stream Day / Calendar Day
Crude Distillation	70.0 / 58.5
Vacuum Tower	50.0 / 37.0
Crude Desalter	70.0 / 58.5
FCCU	29.4 / 26.6
Coker	23.0 / 18.0
Catalytic Reformer	11.8 / 9.9
GDU	25.0 / 12.0

Jane Kelley
Western Refining, Yorktown
Environmental Manager
Phone: (757) 898-9732
Cell: (757) 871-1752

Thomas,Carl
From: Rebecca Gudgeon [rgudgeon@giant.com]
Sent: Tuesday, February 01, 2005 4:16 PM
To: Thomas,Carl
Subject: RE: Precipitation runoff value - contaminated flow

I apologize for not getting back to you yesterday, my little boy was sick and I was "working" from home and didn't have access to everything I needed. After speaking with Pete, it has become obvious that the rainfall value was copied from the last application because it had been copied from the application 10 years ago and it was assumed that it hadn't changed. I researched the area rainfall on several different sites (NOAA for Norfolk, VA, the state Climatologic Board, and the Langley Air Force Base weather station) and found that the more appropriate number would be 43.5 inches of rainfall per year equating to a oily water runoff of 141,207 gallons/day. Please advise how we should go about submitting this change to the permit application; will this e-mail be sufficient or will be have to submit a written change.

Thanks
Rebecca

-----Original Message-----
From: Thomas,Carl [mailto:cdthomas@deq.virginia.gov]
Sent: Tuesday, February 01, 2005 3:38 PM
To: rgudgeon@giant.com
Subject: Precipitation runoff value - contaminated flow

Good Afternoon Ms. Gudgeon,

Finally reached the point where the subject value (0.128222 MGD, or 128,222 gallons/day) appearing in the application's water flow diagram must be confirmed or, an alternate and more representative value be provided to continue with the necessary calculations to develop final Part I.A. effluent limitations for 101.

Request advise status of this value we had discussed late last week.

As of this date, the permit limiting values for only process wastewaters track quite nicely with those of the past, although some numbers are slightly different than past values. Hopefully, the fact sheet will carry enough detail for others to track the development of these limits, etc.

Thanks.

cdthomas@deq.virginia.gov
757.518.2161

ATTACHMENT 6

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
RATIONALE & SUITABLE DATA

TABLE A – APPLICABLE EFFLUENT LIMITATIONS AND DEVELOPMENT OF FINAL PART I.A. VALUES - OUTFALL 101

Due to the peculiarities of the effluent limitations associated with this industrial sector, petroleum refinery, a comparison between the **process wastewaters limitations** is required and the most stringent amongst them shall be utilized in the preparation of the reissued permit. Although not fully detailed in past development documents, a summary of past actions will be set forth in this permit reissuance package. In 40 CFR 419.20 (Sub-Part B - Cracking Subcategory), limitations have been developed for Best Practicable Pollution Control Technology (BPT), Best Available PC Technology (BAT), and Best Conventional PC Technology (BCT). The table below will serve to set forth each of the limited parameters, for each of the three different categories of pollution control technologies addressed by the Federal Effluent Guidelines (FEG).

PARAMETER	BPT Maximum (lbs/1000 bbl feedstock)	BPT 30-Day Avg. (lbs/1000 bbl feedstock)	BAT Maximum (lbs/1000 bbl feedstock)	BAT 30-Day Avg. (lbs/1000 bbl feedstock)	BCT Maximum (lbs/1000 bbl feedstock)	BCT 30-Day Avg. (lbs/1000 bbl feedstock)
Biochemical Oxygen Demand (5-Day)	9.9	5.5	N/A	N/A	9.9	5.5
Total Suspended Solids	6.9	4.4	N/A	N/A	6.9	4.4
(**) Total Organic Carbon (BOD5 x 2.2)	21.8	12.1	21.8	12.1	N/A	N/A
Oil & Grease	3.0	1.6	N/A	N/A	3.0	1.6
Total Phenols (phenolic compounds)	0.074	0.036	***	***	N/A	N/A
Ammonia, as Nitrogen	6.6	3.0	6.6	3.0	N/A	N/A
Sulfide	0.065	0.029	0.065	0.029	N/A	N/A
Total Chromium	0.15	0.088	***	***	N/A	N/A
Hexavalent Chromium	0.012	0.0056	***	***	N/A	N/A
pH	Limited to the range of 6.0 - 9.0 standard units (SU)				Limited to the range of 6.0 - 9.0 standard units (SU)	

** Due to the presence of excessive chloride ion concentration in the facility's process wastewater, it is a BPJ determination to utilize TOC as a limiting parameter based on the provisions of the FEG at 40 CFR 419.13(d). The relevant TOC limitation is developed utilizing a 2.2:1 relationship between TOC and BOD5.

*** The FEG for these parameters require a special evaluation of the particular process streams at the facility and the calculations for these proposed limitations will appear on a following page, Table B.

ATTACHMENT 6

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
RATIONALE & SUITABLE DATA

TABLE B – APPLICABLE EFFLUENT LIMITATIONS AND DEVELOPMENT OF FINAL PART I.A. VALUES - OUTFALL 101

The information that appears in the table below is a summary of calculations that will yield final effluent limitations for phenolic compounds (total phenols), total chromium and hexavalent chromium. BAT effluent limitations factors are found in 40 CFR 419.23(c)(1)(i). The final BAT limitations are developed considering the feedstock throughput (Mbbls) in each of five separate process operations typically expected at petroleum refineries. The calculations resulting from considering each of the five categories of activities are additive and will result in a final limit for the refinery, for the substances noted above. Refer to the table where the facility's process configuration is detailed for the permittee's information on feedstock throughput for each of these operations is detailed.

PARAMETERS & BAT LIMITATIONS	CRUDE		CRACKING/COKING		ASPHALT		LUBE		REFORMING		REFINERY TOTALS
	MAX	AVG	MAX	AVG	MAX	AVG	MAX	AVG	MAX	AVG	
Phenolic Compounds	0.013	0.003	0.147	0.036	0.079	0.019	0.369	0.090	0.132	0.032	Daily maximum
Crude 190.0 Crack/coke 52.4 Asphalt N/A Lube N/A Reform 11.8	Max. 190.0 x 0.013 = 2.47 Avg. 190.0 x 0.003 = 0.57		Max. 52.4 x 0.147 = 7.70 Avg. 52.4 x 0.036 = 1.89		N/A		N/A		Max. 11.8 x 0.132 = 1.56 Avg. 11.8 x 0.032 = 0.38		**11.73** 30-Day Average **2.84**
Total Chromium	0.011	0.004	0.119	0.041	0.064	0.022	0.299	0.104	0.107	0.037	Daily maximum
Crude 190.0 Crack/coke 52.4 Asphalt N/A Lube N/A Reform 11.8	Max. 190.0 x 0.011 = 2.09 Avg. 190.0 x 0.004 = 0.76		Max. 52.4 x 0.119 = 6.24 Avg. 52.4 x 0.041 = 2.15		N/A		N/A		Max. 11.8 x 0.107 = 1.26 Avg. 11.8 x 0.037 = 0.44		**9.59** 30-Day Average **3.35**
Hexavalent Chromium	0.0007	0.0003	0.0076	0.0034	0.0041	0.0019	0.0192	0.0087	0.0069	0.0031	Daily maximum
Crude 190.0 Crack/coke 52.4 Asphalt N/A Lube N/A Reform 11.8	Max. 190.0 x 0.0007 = 0.13 Avg. 190.0 x 0.0003 = 0.06		Max. 52.4 x 0.0076 = 0.40 Avg. 52.4 x 0.0034 = 0.18		N/A		N/A		Max. 11.8 x 0.0069 = 0.08 Avg. 11.8 x 0.0031 = 0.04		**0.61** 30-Day Average **0.28**

NOTE: The facility-specific production configuration values appearing in column 1, beneath each limited parameter, were provided by the permittee in an e-mail dated 2/4/10 and is provided in this attachment.

ATTACHMENT 6

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
RATIONALE & SUITABLE DATA

TABLE C – APPLICABLE EFFLUENT LIMITATIONS AND DEVELOPMENT OF FINAL PART I.A. VALUES - OUTFALL 101

Due to the peculiarities of the effluent limitations associated with this industrial sector, petroleum refinery, a comparison between the contaminated storm water runoff limitations (additive to limitations for process wastewaters) is required and the most stringent amongst them shall be utilized in the preparation of the reissued permit. In 40 CFR 419.20 (Sub-Part B - Cracking Subcategory), limitations have been developed for Best Practicable Pollution Control Technology (BPT), Best Available PC Technology (BAT), and Best Conventional PC Technology (BCT). The table below will serve to set forth each of the limited parameters, for each of the three different categories of pollution control technologies addressed by the Federal Effluent Guidelines (FEG).

PARAMETER	BPT Maximum (lbs/1000 gal SW flow)	BPT 30-Day Avg. (lbs/1000 gal SW flow)	BAT Maximum (lbs/1000 gal SW flow)	BAT 30-Day Avg. (lbs/1000 gal SW flow)	BCT Maximum (lbs/1000 gal SW flow)	BCT 30-Day Avg. (lbs/1000 gal SW flow)
Biochemical Oxygen Demand (5-Day)	0.40	0.22	N/A	N/A	0.40	0.22
Total Suspended Solids	0.28	0.18	N/A	N/A	0.28	0.18
(**) Total Organic Carbon (BOD5 x 2.2)	0.88	0.48	0.88	0.48	N/A	N/A
Oil & Grease	0.13	0.067	N/A	N/A	0.13	0.067
Total Phenols (phenolic compounds)	0.0029	0.0014	0.0029	0.0014	N/A	N/A
Ammonia, as Nitrogen	N/A	N/A	N/A	N/A	N/A	N/A
Sulfide	N/A	N/A	N/A	N/A	N/A	N/A
Total Chromium	0.0060	0.0035	0.0050	0.0018	N/A	N/A
Hexavalent Chromium	0.00052	0.00023	0.00052	0.00023	N/A	N/A
pH	Limited to the range of 6.0 - 9.0 standard units (SU)				Limited to the range of 6.0 - 9.0 standard units (SU)	

** Due to the presence of excessive chloride ion concentration in the facility's combined wastewater, it is a BPJ determination to utilize TOC as a limiting parameter based on the provisions of the FEG at 40 CFR 419.13(d). The relevant TOC limitation is developed utilizing a 2.2:1 relationship between TOC and BOD5.

ATTACHMENT 6

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
RATIONALE & SUITABLE DATA

TABLE D1 – APPLICABLE EFFLUENT LIMITATIONS AND DEVELOPMENT OF FINAL PART I.A. VALUES - OUTFALL 101

This table defines the most suitable limitations for treated process wastewater discharges from outfall 101.

PARAMETER	BPT DAILY MAX (lb/day)	BAT DAILY MAX (lb/day)	BCT DAILY MAX (lb/day)	BPT 30-DAY AVG (lb/day)	BAT 30-DAY AVG (lb/day)	BCT 30-DAY AVG (lb/day)	BASIS FOR LIMITS
FLOW (MGD)	N/A	N/A	N/A	N/A	N/A	N/A	NO LIMIT, REPORT BOTH DAILY MAXIMUM AND MONTHLY AVERAGE FLOW VALUES
pH (SU), limited range	6.0 - 9.0	N/A	6.0 - 9.0	6.0 - 9.0	N/A	6.0 - 9.0	LIMITED TO RANGE OF 6.0 - 9.0 SU - BPT
BOD_5	929.73	N/A	BPT = BCT	516.52	N/A	BPT = BCT	BPT
TSS	649.99	N/A	BPT = BCT	413.21	N/A	BPT = BCT	BPT
TOC	2045.40	BPT/BCT	N/A	1136.34	BPT/BCT	N/A	BPT
O & G	281.74	N/A	BPT = BCT	150.26	N/A	BPT = BCT	BPT
AMMONIA-N	619.82	BPT = BAT	N/A	281.74	BPT = BAT	N/A	BPT
SULFIDE	6.10	BPT = BAT	N/A	2.72	BPT = BAT	N/A	BPT
PHENOLIC COMPOUNDS	6.95	~~11.73~~	N/A	~~3.38~~	2.84	N/A	BPT for Maximum BAT for Average
TOTAL CHROMIUM	~~14.09~~	9.59	N/A	~~8.26~~	3.35	N/A	BAT
HEXAVALENT CHROMIUM	~~1.13~~	0.61	N/A	~~0.53~~	0.28	N/A	BAT

ATTACHMENT 6

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
RATIONALE & SUITABLE DATA

TABLE D2 – APPLICABLE EFFLUENT LIMITATIONS AND DEVELOPMENT OF FINAL PART I.A. VALUES - OUTFALL 101

This table defines the most suitable limitations for discharges of treated precipitation runoff from outfall 101.

PARAMETER	BPT DAILY MAX (lb/day)	BAT DAILY MAX (lb/day)	BCT DAILY MAX (lb/day)	BPT 30-DAY AVG (lb/day)	BAT 30-DAY AVG (lb/day)	BCT 30-DAY AVG (lb/day)	BASIS FOR LIMITS
FLOW (MGD)	N/A	N/A	N/A	N/A	N/A	N/A	NO LIMIT, REPORT BOTH DAILY MAXIMUM AND MONTHLY AVERAGE FLOW VALUES
pH (SU), limited range	6.0 - 9.0	N/A	6.0 - 9.0	6.0 - 9.0	N/A	6.0 - 9.0	LIMITED TO RANGE OF 6.0 - 9.0 SU - BPT
BOD_5	56.48	/A	BPT = BCT	31.06	N/A	BPT = BCT	BPT
TSS	39.54	N/A	BPT = BCT	25.42	N/A	BPT = BCT	BPT
TOC	124.26	BPT/BCT	N/A	67.78	BPT/BCT	N/A	BPT
O & G	18.36	N/A	BPT = BCT	9.46	N/A	BPT = BCT	BPT
AMMONIA-N							No additional allowance
SULFIDE							No additional allowance
PHENOLIC COMPOUNDS	0.41	BPT = BAT	N/A	0.20	BPT = BAT	N/A	BPT
TOTAL CHROMIUM	~~0.85~~	0.71	N/A	~~0.49~~	0.25	N/A	BAT
HEXAVALENT CHROMIUM	0.07	BPT = BAT	N/A	0.03	BPT = BAT	N/A	BPT

ATTACHMENT 6

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
RATIONALE & SUITABLE DATA

TABLE E - PROPOSED FINAL EFFLUENT LIMITATIONS AT OUTFALL 101 - (Summation of Process and Runoff allowances)
In accordance with DEQ guidance Memorandum 06-2016 (dtd 11/02/06), the final limitations will be rounded off in a manner consistent with this established permit development protocol.

PARAMETER	PROCESS DAILY MAX	RUNOFF DAILY MAX	PART I.A. DAILY MAX	PROCESS 30-DAY AVERAGE	RUNOFF 30-DAY AVERAGE	PART I.A 30-DAY AVERAGE
FLOW (MGD)	No Limit	NL	NL	NL	NL	NL
pH (SU)	N/A		6.0 - 9.0	N/A		6.0 - 9.0
BOD5 (#/unit time)	929.73	56.48	(986.21) ⇨ **990**	516.52	31.06	(547.58) ⇨ **550**
TSS (#/unit time)	647.99	39.54	(687.53) ⇨ **690**	413.21	25.42	(438.63) ⇨ **440**
TOC (#/unit time)	2045.40	124.26	(2169.66) ⇨ **2200**	1136.34	67.78	(1204.12 ⇨ **1200**
O & G (#/unit time)	281.74	18.36	(300.10) ⇨ **300**	150.26	9.46	(159.72) ⇨ **160**
AMMONIA-N (#/unit time)	619.82	0	(619.82) ⇨ **620**	281.74	0	(281.74) ⇨ **280**
SULFIDE (#/unit time)	6.10	0	(6.10) ⇨ **6.1**	2.72	0	(2.72) ⇨ **2.7**
TOTAL PHENOLS (#/unit time)	6.95	0.41	(7.36) ⇨ **7.4**	2.84	0.20	(3.04) ⇨ **3.0**
TOTAL CHROMIUM (#/unit time)	9.59	0.71	(10.3) ⇨ **10**	3.35	0.25	(3.60⇨ **3.6**
HEXAVALENT CHROMIUM (#/unit time)	0.61	0.07	(0.68)⇨ **0.68**	0.28	0.03	(0.31)⇨ **0.31**

Outfall 102

Outfall 102 is permitted for discharge of once-through cooling water and reused water. The once-through cooling water is treated with a form of chlorine/bromide disinfection in order to control bio-fouling of the distribution system throughout the facility's process operations.

Prior to discharge, the wastewater is directed to a large circular basin for temperature equalization. At times, the permittee may redirect up to 5% of this equalized wastewater into an adjacent multi-cell sedimentation basin that receives precipitation runoff from areas that are expected to be free of contamination by petroleum products or associated residues or pollutants. The purpose for this action is to ensure that a minimum level of flow is present in this sedimentation basin at all times. If non-contact cooling water becomes contaminated by coming in to contact with any petroleum products, this condition would be readily detected by the inspection program in place at the facility.

The permittee submitted a model on the affects of the thermal discharge on the receiving stream in June of 1994 (applicable reference is enclosed). This model considered the wastewater flow and the expected ambient characteristics of the receiving stream at critical conditions. The Department accepted the model and resulting temperature limitation of 44°C. Based on BPJ and the fact that the activity and expected characteristics of the receiving stream have not changed significantly since the determination, the current temperature limitation will remain at 44°C. However, during the next reissuance if the discharge flow increases, the permittee should be requested to perform an update on the study.

The FEG under BPT, BAT and BCT, all reference non-contact cooling water.

Per BPT and BAT (40 CFR 419.22(d) and 419.23(e)):

> "The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l."

Per BCT (40 CFR 419.24(d)):

> "The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section."

Basically, the numeric effluent limitations required for process wastewaters and contaminated precipitation runoff are not to be imposed on once-through cooling water with the exception of total organic carbon (TOC). This has been the approach in previous issuances based on the FEG and BPJ in that the permittee has no control over the TOC content of the source water (York River). In Virginia, the use of net limitations is allowed in similar situations (see 9 VAC 25-31-230 G).

Flow: There is no limit on flow. Monitoring is 1/Week with monthly average and daily maximum reporting requirements. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is standard for industrial operations and no change from the previous permit.

Temperature: A daily maximum of 44°C. Monitoring required is continuous with Immersion Stabilization. This is based on BPJ and Water Quality Standards, where thermal discharges are released to state waters need to be protective of the receiving stream after complete mix.

TOC A daily maximum limit of 5mg/l. Monitoring required is a 24 Hr. composite sample 1/Week. This is based on BPJ and the FEG for BPT, BAT and BCT. This approach was taken during the last permit reissuance and no changes are made for this reissuance.

Outfall 002

Outfall 002 is permitted to discharge precipitation from runoff associated with industrial activity, diverted flows from Outfalls 101 and/or 102, fire main wastewaters, uncontaminated wastewaters from hydrostatic testing (outfall 201), and reuse water.

Uncontaminated runoff is not addressed in the FEG and permitting activities have not changed since the previous reissuance therefore based on BPJ and review of the data, the limitations and monitoring parameters will continue for this outfall for this reissuance.

Flow: There is no limit on flow. Monitoring is 1/Week with monthly average and daily maximum reporting requirements. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is standard for industrial operations and no change from the previous permit.

pH: The minimum limit is 6.0 s.u. and the maximum limit is 9.0 s.u. with monitoring 1/Week requirements. This requirement is based BPJ and the Water Quality Standards (9 VAC-260-50) to protect the Coastal Waters of the State. These limits and monitoring frequency are standard for industrial operations and no change from the previous permit.

TOC The maximum daily limit is 35 mg/l with monitoring 1/Week. The applicable limit in the FEG is 110 mg/l for a certain class discharge. However, the permittee readily meets the current limit and to increase this value would cause an anti-backsliding issue. Based on BPJ and to protect the current water quality of the receiving stream the current limit will continue for this reissuance.

Oil and Grease: The maximum daily limit is 15 mg/l with reporting only for monthly average. Monitoring is 1/week. Based on the possibility of petroleum contamination from any of the inputs to the system, the FEG recommends a limitation of 15 mg/l. Based on BPJ and to protect the current water quality of the receiving waters, this limit will continue for this reissuance.

ATTACHMENT 6, continued

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
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Temperature: A daily maximum of 44°C. Monitoring required is continuous with Immersion Stabilization. This is based on BPJ and Water Quality Standards, where thermal discharges are released to state waters need to be protective of the receiving stream after complete mix.

Total Phosphorus: The monthly average limit of 2.0 mg/l and reporting only for daily maximum. Monitoring is 1/Month. This is based on antibacksliding regulations, BPJ to protect water quality and is believed necessary to evaluate the potential impact of the discharge on receiving waters since the refinery process would generate compounds that contain phosphorus.

Total Arsenic: There is no limit on Arsenic and reporting only for monthly average and daily maximum. Monitoring is 1/Month. This is based on BPJ to protect water quality and is believed necessary to evaluate the potential impact of the discharge on the receiving waters since the refinery is constructing and managing CAMUs during this permit term.

Total Cadmium: There is no limit on Cadmium and reporting only for monthly average and daily maximum. Monitoring is 1/Month. This is based on BPJ to protect water quality and is believed necessary to evaluate the potential impact of the discharge on the receiving waters since the refinery is constructing and managing CAMUs during this permit term.

Total Chromium: There is no limit on Chromium and reporting only for monthly average and daily maximum. Monitoring is 1/Month. This is based on BPJ to protect water quality and is believed necessary to evaluate the potential impact of the discharge on the receiving waters since the refinery is constructing and managing CAMUs during this permit term.

Fecal Coliform: There is no limit, monitoring is a grab sample 2/Month. This is based on Water Quality Standards (9 VAC 25-260-160) and is believed protective of instream standards. Current guidance requires fecal coliform monitoring in salt or transition waters if the discharge is to shellfish waters. BPJ determines that this frequency is adequate to determine compliance with the standard.

Enterococci: There is no limit, monitoring is a grab sample 2/Month. This is based on BPJ and water quality standards (9 VAC25-260-160).

Outfall 201

This outfall is permitted for hydrostatic test water and is an internal discharge to Outfall 002. The hydrostatic tests waters are generated from integrity testing that may be performed on tanks, piping and other similar structures at the facility where no petroleum product residues or other sources of contaminants in the water are suspected to be present. The DEQ toxicity guidance document 00-2012 requires toxicity monitoring for all hydrostatic test waters. Toxicity monitoring has been added for the hydrostatic discharges, see Attachment 8.

Due to the infrequency of the hydrostatic testing, monitoring will be annually rather than monthly based on BPJ for this permit term.

Wastewaters from hydrostatic test water is not addressed in the FEG and permitting activities have not changed since the previous reissuance however internal guidance (VPDES permit manual) has changed for two parameters, Total Xylenes and Naphthalene and those parameter limitations are more stringent. Based on BPJ and review of the data, the limitations and monitoring for the remaining parameters will continue for this outfall for this reissuance.

Flow: There is no limit on flow. Monitoring is 1/Year with monthly average and daily maximum reporting requirements. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is standard for industrial operations and no change from the previous permit.

pH: The minimum limit is 6.0 s.u. and the maximum limit is 9.0 s.u. with monitoring 1/Year requirements. This requirement is based BPJ and the Water Quality Standards (9 VAC-260-50) to protect the Coastal Waters of the State. These limits and monitoring frequency are standard for industrial operations and no change from the previous permit.

Total Petroleum Hydrocarbons: The maximum daily limit is 15 mg/l with monitoring is 1/Year. Based on the possibility of petroleum contamination from any of the inputs to the system, the FEG recommends a limitation of 15 mg/l. Based on BPJ and to protect the current water quality of the receiving waters, this limit will continue for this reissuance.

Benzene: The maximum daily limit is 50 ug/l with monitoring 1/Year. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is standard for this type of industrial operations and is consistent with relevant DEQ guidance.

Toluene: The maximum daily limit is 175 ug/l with monitoring 1/Year. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is standard for this type of industrial operations and is consistent with relevant DEQ guidance.

ATTACHMENT 6, continued
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
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Ethylbenzene: The maximum daily limit is 320 ug/l with monitoring 1/Year. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is standard for this type of industrial operations and is consistent with relevant DEQ guidance.

Total Xylenes: The maximum daily limit is 33 ug/l with monitoring 1/Year. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is more stringent than the previous limit of 82 ug/l. This standard for this type of industrial operations and is consistent with new relevant DEQ guidance.

Naphthalene: The maximum daily limit is 10 ug/l with monitoring 1/Year. The basis for this is BPJ and is believed necessary to evaluate the potential impact of the discharge on receiving waters. This is more stringent than the previous limit of 62 ug/l. This is standard for this type of industrial operations and is consistent with new relevant DEQ guidance.

Total Residual Chlorine: There is no limit on Total Residual Chlorine. Daily maximum monitoring reporting is 1/Year. The limit based on relevant DEQ guidance was removed during the last permit reissuance because the outfall is an internal point of discharge with the understanding that the permittee may not utilize potable water for this purpose as there are other sources of non-potable water available to test petroleum product storage and transfer equipment. There is no change for this parameter for this issuance.

Outfall 004

Outfall 004 is permitted to discharge wastewater associated with fire main flushing and freeze protection at the offshore pier where tank vessels and barges moor during petroleum product transfer activities. Due to the dangers inherent with this industrial activity, the pier is fitted with fire-fighting stations and other supplies of water to this location. In order to properly operate the site, discharges of wasted fire main flush water periodically occur. During the winter months, a number of connections are allowed to discharge small amounts of water for freeze protection.

Reclamation and reuse waters are used for this process as the schematics submitted for this application illustrate. Upon further review and explanation, the reclamation and reuse waters are directly piped to the offshore pier from HRSD. HRSD is in a contract with the facility which ensures these waters meet the standard for Level 1 Reclaimed Water as defined in 9 VAC 25-740 et seq. However, the facility remains responsible for the discharges based on the permit and the documentation from HRSD should be kept on site by permittee in accordance with Part II of the VPDES permit.

Based on a previous permitting determination, there are no monitoring requirements effluent limitations applied to this discharge. Based on a BPJ determination, this approach to the permitting of this discharge shall be continued. The associated Part I.A. page of the permit will carry the following language to address the potential for a discharge of wastewaters not allowed by the permit at this location.

THIS OUTFALL SHALL CONTAIN ONLY DISCHARGES OF FIRE MAIN FLUSHING WASTEWATERS AND DISCHARGES ASSOCIATED WITH FREEZE PROTECTION AT AREAS ASSOCIATED WITH PIER OPERATIONS. THERE SHALL BE NO DISCHARGE OF REFINERY PROCESS WASTEWATERS FROM THIS SOURCE.

HRSD

P.O. BOX 5911, VIRGINIA BEACH, VIRGINIA 23471-0911 · (757) 460-7056 · FAX (757) 460-2372
www.hrsd.com

4/20/2010

Dear Jane Kelley (Western Refining Environmental Manager),

HRSD provides the Yorktown Refinery (Western Refining) approximately 0.5MGD of reclaimed water each day. Production of this reclaimed water began in July 2002 before the Virginia Water Reclamation and Reuse Regulation (9VAC25-740) was effective (October 1, 2008). The original written agreement between HRSD and the Refinery does not reflect all the requirements of the regulation. Level 2 reclaimed water would be required at the Refinery since direct human contact is unlikely. However, HRSD has an internal water reuse policy that encourages the supply of Level 1 reclaimed water quality as defined by the Virginia Water Reclamation and Reuse Regulation for non-potable uses. HRSD supplies reclaimed water to the Refinery after advanced secondary treatment with additional 10 micron filtration and additional chlorine disinfection. HRSD completes required monitoring / analysis of the reclaimed water prior to delivery (see Table 1). Table 1 indicates that Level 1 reclaimed water quality was achieved. Fecal Coliform, Total Residual Chlorine, pH, BOD_5, and Turbidity results comply with the regulatory requirements (see Table 2).

The quality monitoring program conducted by HRSD on the reclaimed water discharged to the end user (Refinery) is consistent with monitoring requirements. The reclaimed water quality leaving the HRSD site meets all water quality requirements for the designated uses at the Refinery (including firewater). The monitoring data provided by the producer (HRSD) should satisfy the monitoring requirements for the end user (Refinery).

This project was the first industrial reuse project in Virginia; gaining support from Virginia regulators and Virginia dignitaries. It is the policy of HRSD and the Virginia regulators to promote and encourage the reclamation and reuse of wastewater in a manor protective of the environment and public health as an alternative to directly discharging pollutants into the waters of the state.

Sincerely,
Kevin Parker

Environmental Scientist
HRSD – Water Quality

TABLE 1

MONTHLY PLANT OPERATIONS REPORT
HAMPTON ROADS SANITATION DISTRICT

York River
April, 2010

Sheet No. T-6B
WATER REUSE

York River Reuse FILTER EFFLUENT

DATE	16 EFF BOD	18 EFF NH3	19 EFF T-N	21 TURB	22 CHLOR RESID	23 NH3	24 T-P	25 pH	26 TSS	33 FECL COLI
	mg/l	mg/l	mg/L	NTU	mg/l	mg/l	mg/l	SU	mg/l	No./ 100 ml
Thu-01	6	< 0.20	15.1	0.80	1.76	0.03	1.08	7.0	< 1	2
Fri-02				0.63	1.36	0.02		6.5	< 1	1
Sat-03				0.53	1.44	0.03		6.5	< 1	
Sun-04	7	< 0.20	13.6	0.63	1.49	0.02	1.33	6.9	< 1	
Mon-05				0.67	1.42	0.02	1.51	7.0	< 1	5
Tue-06	21	2.5	12.5	2.44	2.66	3.84	1.62	7.0	4	5
Wed-07				1.35	2.45	0.04	0.72	6.9	< 1	< 1
Thu-08	4	< 0.20	10.2	0.78	1.54	0.02	1.38	7.2	< 1	< 1
Fri-09				0.50	1.48	0.03		7.1	< 1	< 1
Sat-10				0.55	1.70	0.04		7.1	< 1	
Sun-11	< 2	< 0.20	14.0	0.40	1.50	0.03	1.90	7.2	< 1	
Mon-12				0.53	1.52	0.03	1.99	6.8	< 1	< 1
Tue-13	4	< 0.20	14.0	0.40	1.27	0.02	2.06	6.9	< 1	< 1
Wed-14				0.43	1.35	0.04	2.09	6.9	< 1	1
Thu-15		< 0.20		0.50	1.67	0.02	2.09	6.9	< 1	< 1
Fri-16				0.63	1.45	0.02		6.9		< 1
Sat-17				0.45	1.86	0.02		6.9		
Sun-18		< 0.20		0.55	1.06	0.02	3.23	6.9		
Mon-19				0.60	1.19	0.02		6.9		

MAX	21	2.5	15.1	2.44	2.66	3.84	3.23	7.2	4	
MIN	4	2.5	10.2	0.40	1.06	0.02	0.72	6.5	1	
AVG	8	2.5	13.2	0.70	1.59	0.23	1.75	6.9	1	1

Table 2

Water Reclamation and Reuse Regulation (9VAC25-740)

Parameter	Standards for Reclaimed Water	
	Level 1	**Level 2**
Description of minimum treatment	Secondary treatment with filtration and higher level disinfection	Secondary treatment with standard disinfection
Bacterial Standards:		
(1) Fecal coliform[1] or	Monthly geometric mean[2] ≤ 14 colonies/100 ml; CAT[3] > 49 colonies/100 ml	Monthly geometric mean[2] ≤ 200 colonies/100 ml; CAT[3] > 800 colonies/100 ml
(2) E. coli[1] or	Monthly geometric mean[2] ≤ 11 colonies/100 ml; CAT[3] > 35 colonies/100 ml	Monthly geometric mean[2] ≤ 126 colonies/100 ml; CAT[3] > 235 colonies/100 ml
(3) Enterococci[1]	Monthly geometric mean[2] ≤ 11 colonies/100 ml; CAT[3] > 24 colonies/100 ml	Monthly geometric mean[2] ≤ 35 colonies/100 ml; CAT[3] > 104 colonies/100 ml
Total Residual Chlorine[4]	CAT[3] < 1.0 mg/l[5] after a minimum contact time of 30 minutes at average flow or 20 minutes at peak flow	CAT[3] < 1.0 mg/l[5] after a minimum contact time of 30 minutes at average flow or 20 minutes at peak flow
pH	6.0-9.0 standard units	6.0-9.0 standard units
BOD_5	Monthly average ≤ 10 mg/l	Monthly average ≤ 30 mg/l; maximum weekly average 45 mg/l
$CBOD_5$[6]	Monthly average ≤ 8 mg/l	Monthly average ≤ 25 mg/l; maximum weekly average 40 mg/l
Turbidity	Daily average of discrete measurements recorded over a 24-hour period ≤ 2 NTU; CAT[3] > 5 NTU	
Total Suspended Solids (TSS)		Monthly average ≤ 30 mg/l; maximum weekly average 45 mg/l

1. After disinfection.
2. For the purpose of calculating the geometric mean, bacterial analytical results below the detection level of the analytical method used shall be reported as values equal to the detection level.
3. "CAT" refers to corrective action threshold.
4. Applies only if chlorine is used for disinfection.
5. TRC less than 1.0 mg/l may be authorized by the Board if demonstrated to provide comparable disinfection through a chlorine reduction program in accordance with the Sewage Collection and Treatment Regulations (9 VAC 25-790).
6. Applies only if CBOD is used in lieu of BOD_5

1.0 Introduction

This Revised Corrective Measures Implementation Work Plan (CMI WP) presents information used to develop and plan Corrective Action measures for impacted media at the Western Yorktown Refinery (Refinery) located at 2201 Goodwin Neck Road, Yorktown, Virginia. Western Refining (Western) is submitting this revised CMI WP in order to incorporate refinements and/or modifications to the CMI WP dated 25 October 2007 based on conditions encountered in the field to date and recent meetings/correspondence with the United Stated Environmental Protection Agency Region III (USEPA). This document is based on previously submitted documents prepared for the Refinery by its outside consultants including The RETEC Group Inc., its affiliates and parent company.

1.1 Site Background and History

Figure 1 illustrates the refinery location on the Goodwin Neck Peninsula and its surrounding regional geographic features. The Refinery occupies approximately 600 acres of land bordered by the York River to the north, by Back Creek to the south, by Dominion Power station to the west, and by Bull Creek Pond (BCP) and a York River tidal salt marsh area to the east. The Refinery began its operations in 1956 and was previously owned by Amoco Oil until 1999 and then BP Products North America, Incorporated (BP) until 14 May 2002. The Refinery was then owned by Giant Industries Arizona, Inc. and operated as Giant Yorktown, Inc., a wholly-owned subsidiary of Giant Industries, Inc. Western Refining, Inc. acquired all the stock of Giant Industries, Inc. on 31 May 2007 and as a result of this merger, the Refinery is now Western Refining Yorktown, Inc.

The Refinery produces unleaded gasoline, diesel fuels, liquefied petroleum gas, butane, furnace oil, petroleum coke, and sulfur. Currently, the Refinery has the capacity to refine approximately 62,000 barrels of crude oil per day.

On 31 October 1991 the USEPA and BP entered into a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Corrective Measures Study (CMS) Final Administrative Order on Consent (RFI/CMS Order). The RFI/CMS Order provides the framework for investigating the extent of hazardous waste and/or hazardous compounds in soils, sediments, groundwater, and surface water from Refinery operations.

The contaminants of concern (COCs) were identified in the RFI Report and referenced in the CMI Consent Order (Section IV-F). The COCs include volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), phenols, and heavy metals such as arsenic, chromium, and cadmium. The USEPA determined that remediation was required to address these contaminants. The CMS conducted for the

site provided an evaluation of clean-up alternatives based on criteria set forth in the RFI/CMS Order.
The Refinery filed an application for a Corrective Action Management Unit (CAMU) under the 1993 CAMU Rule, grandfather status. This corrective action remedy was proposed in the BP Amoco (Giant) Yorktown Refinery Statement of Basis issued by the USEPA on 5 November 2003 pending a 30-day public comment period, and finalized with the Final Decision and Response to Comments (FDRTC) on Proposed Corrective Measures under RCRA Section 3008(h) issued by the USEPA on 31 March 2004. The RCRA Section 3008(h) CMI Final Administrative Order on Consent (CMI Order) became effective on 18 August 2006.

1.2 CMI Work Plan Purpose

The purpose of this CMI WP is to present appropriate corrective action(s) that will protect human health and the environment via controlling regulatory documents including but not limited to the CMI Order, Attachment A - CMI Scope of Work, Statement of Basis for Proposed Corrective Measures, and the FDRTC.

This revised CMI WP includes the following:

- Summary of investigation and design submittals conducted to date;
- Summary of corrective measures construction conducted to date;
- Corrective action objectives and performance standards;
- Summary of the conceptual design for CAMU West;
- Summary of the groundwater remediation methods that will be considered at the Refinery in order to meet the Corrective Action Objectives;
- Schedule of milestones for design, construction, and completion of the proposed Phase II corrective measures implementation;
- Schedule of milestones for groundwater monitoring, source removal;
- Groundwater remedy support tasks;

2.0 Site Description and Existing Conditions

2.1 Local Geology

Numerous borings have been installed across the Refinery, and the results indicate that the stratigraphy underlying the Refinery consists of three lithostratigraphic units: 1) surficial artificial fill material and surficial alluvial and marsh deposits of Holocene age, 2) the late Pleistocene-age Lynnhaven Member of the Tabb Formation, and 3) the Yorktown Formation of Pliocene age. An erosional unconformity separates the Tabb and Yorktown Formations and four formations have apparently been eroded away, including the Shirley, Chuckatuck, Windsor, and Bacons Castle.

2.2 Local Lithology

The surface and uppermost shallow soil encountered at the Refinery include Tabb Formation sediments and backfill soil material. The fill material is observed primarily in four areas of the Refinery and laterally extends over approximately one-fifth of the developed portion of the Refinery.

Fill materials were emplaced during the Refinery's initial construction phase when low lying areas such as drainage swales and channels were backfilled to prepare a more level surface suitable for site development. Fill thickness varies across the site with estimates indicating up to 12 feet of fill present in deeper channels.

Fill material used in construction of the Refinery was dredged from the bottom of the York River and considered displaced Yorktown Formation sediments (Extent and Rate of Contaminant Migration and Hydrogeologic Report, The Earth Technology Corporation, 1988). These sediments are heavily weathered yet exhibit the distinctive molluscan shell fragments and glauconitic mineralogy characteristic of the Yorktown Formation. The material generally is described as a green medium sand with shell fragments to an olive brown or gray fine-medium-coarse sand, well sorted, little to trace silt and clay, and abundant shell fragments. Relative to the underlying native (undisturbed) Tabb Formation sediments, the fill material often is coarser, better sorted, and less compact.

Sediments of the Tabb Formation are laterally adjacent and underlie the surficial fill material as the fill was placed into topographic depressions on the surface of the Tabb Formation. These sediments are light gray to orange, mottled quartz sands, sandy clays, and clayey sands. The Tabb Formation unconformably overlies the Yorktown Formation, and the basal sediments of the Tabb contain trace amounts of mica and glauconite, suggesting the reworking of the underlying Yorktown sediments. The basal portion of the Tabb Formation may act as a semi-confining layer. Tabb Formation sediments at the site range in thickness from approximately 8 to 34 feet. The thickness

of the Tabb Formation at the western portions and center of the Refinery appears to be fairly uniform, generally about 20 feet and equally divided between the upper sandy unit and the lower silty clayey unit.

The underlying Yorktown Formation occurs at depths ranging from approximately 20 to 35 feet below ground surface (bgs) across the site and consists of gray to green, fine-grained sand, with abundant shell fragments and varying amounts of silt and clay that decrease with depth. These sediments are composed of subangular quartz, minor amounts of glauconite, trace mica, feldspar, and molluscan fossils. Yorktown Formation sediments are defined as a clean, fine sand with occasional beds of silt and clayey sand. No borings completed during Refinery investigations have penetrated the entire thickness of the Yorktown; most deep borings having been completed to a depth of approximately 60 feet bgs with the deepest boring advanced to a depth of approximately 100 feet bgs.

2.3 Local Hydrogeology

The shallow groundwater system in York County consists of the unconfined Columbia aquifer and two confined aquifers. Locally, either the Cornwallis Cave confining unit and/or the Yorktown confining unit can be missing. In the vicinity of the Refinery, the Cornwallis Cave and Yorktown-Eastover aquifers merge to form the YCS aquifer system in the absence of the Yorktown confining unit. The various geologic units have been grouped, based on their ability to transmit water, into three hydrogeologic units: 1) the Columbia aquifer, 2) the Cornwallis Cave confining unit, and 3) the YCS aquifer system.

The Columbia aquifer is unconfined and occurs within the artificial fill, surficial deposits, and the more permeable sandy fluvial and estuarine sediments of the Tabb Formation. This aquifer begins at the water table, approximately 4 to 6 feet bgs, and is approximately 5 to 25 feet thick. The unconfined conditions of this aquifer allow it to rise and fall in response to seasonal variations in recharge and discharge.

Some of the fill areas are perennially water saturated and as such are incorporated into the Columbia aquifer. Given that fill material was emplaced into former surface drainage pathways, groundwater in the Columbia aquifer would be expected to exhibit some enhanced flow along the fill channels.

The Cornwallis Cave confining unit consists of basal sediments of the Tabb Formation and may contain reworked sediments of the upper Yorktown Formation. The Cornwallis Cave confining unit is likely a semi-confining layer impeding, but not completely isolating, groundwater flow from the Columbia aquifer to the deeper YCS aquifer system. The YCS aquifer system underlies the Columbia aquifer and Cornwallis Cave confining unit and is approximately 100 feet thick on Goodwin Neck.

2.4 Investigations Conducted to Date

The investigations that have been conducted at the Refinery have been implemented in a phased approach. Figure 2 provides a site plan of the refinery illustrating the locations of the Solid Waste Management Units (SWMUs), Area of Concern (AOC), existing CAMU East and the proposed CAMU West.

2.4.1 Primary Investigations and Reports

- **Phase I RCRA Facility Investigation Work Plan** (RETEC, 1992) described the approach to RFI activities and included a Project Management Plan, a Data Collection and Quality Assurance (QA) Plan, a Data Management Plan, and a Community Relations Plan (CRP). This work plan was submitted in June 1992.
- **Preliminary Ecological Assessment** (RUST Environment & Infrastructure) was submitted in May 1994.
- **Site-Specific Health and Safety Plan (HASP)** (RETEC, 1994) documented the procedures taken at the site to maintain high standards of safety while performing the Phase I investigation, and was submitted in January 1994.
- **Phase I RFI Report** (RETEC, 1997) presented the results of the Phase I RFI investigation and a preliminary risk assessment, and was submitted in January 1997. This report presented the investigation of nine SWMUs and one AOC, a preliminary ecological risk assessment, and the establishment of a site conceptual model. The Phase I RFI did not include the investigation of SWMUs that are regulated under separate agreements and will be closed as regulated units .These included SWMU 1 (Landfarm 10), SWMU 3 (Landfarm 12), and SWMU 4 (IWL Sites A and B).
- **Sampling and Analysis Plan (SAP)** (ThermoRetec, 1999) provided detailed information on field procedures for the Phase II RFI and the interim period of time following the completion of the Phase II investigation and the approval of the Phase II RFI Report and was submitted in September 1999. The SAP is a supporting document to the Phase II RFI Work Plan and provided a reference guide to conduct field activities, which included sampling of groundwater, surface water, sediment, soil, and benthic fauna. In addition, the SAP provided methods for installation and development of permanent and temporary wells/piezometers, and slug testing procedures. These field activities were augmented by detailed lists of supporting supplies and materials, standard operating procedures (SOPs), where applicable, and field forms for documentation purposes.
- **Phase II RFI Work Plan** (ThermoRetec, 1999) provided detailed information on the investigation approach and updated the original Project Management Plan (approved December 1999). The Quality Assurance Project Plan (QAPjP) and HASP that were prepared for the first phase of the investigation were revised and resubmitted with the Phase II RFI Work Plan.

- **Modified Closure Plan, Landfarms 10 and 12** (ThermoRetec, 1999) was submitted in December 1999 and was approved by May 1999. The Closure Plan presented clean closure; CAMU operation, closure, and post-closure; and contingent closure and post-closure plans. This document was prepared as a modification to the January 1990 Approved Closure Plan for Land Treatment Units at the Amoco Yorktown Refinery [Virginia Department of Environmental Quality (VDEQ)], 1990) and replaced that document in its entirety. This Closure Plan modified the 1990 approved plan to: 1) redefine the clean closure performance standards in terms of human health risk, 2) allow a combination of clean closure and closure with waste in place in different sections of the landfarms, 3) describe the designation of a proposed CAMU on the landfarms prior to closure, and 4) specify construction of a hybrid cap with geosynthetic membrane for contingent closure (in the event a CAMU is not utilized).
- **Phase II RFI Ecological Assessment – SAP Addendum** (RETEC, 2000) summarized field work that was conducted to complete original RFI Work Plan requirements for ecological work and to implement additional ecological field work. The additional/revised field work was described in this Addendum.
- **Phase II RFI Report** (RETEC, 2000) was submitted in November 2000, and revised 1 October 2001. The overall purpose of the Phase II RFI was to define the nature and extent of contamination resulting from releases from the SWMUs and AOC. This report described the sampling and analytical techniques used to characterize and define the extent of contaminant releases from SWMUs and AOCs, reviewed data quality, presented the chemical and other physical, ecological, regional, and site data, confirmed contaminant sources, identified human and ecological constituents of interest, and described conclusions and recommendations for continuing with the corrective action process. In August 2000, USEPA and BP agreed to delay the risk assessment (originally proposed to be completed with this report) until potential data gaps could be addressed.
- **Phase II RFI Addendum** (RETEC, 2001) summarized data gaps that were identified during the Phase II RFI.
- **Corrective Measures Implementation Work Plan** (RETEC, 2002) was submitted in February 2002. Revised versions of the CMI WP were subsequently submitted in January 2007, April 2007, June 2007, and October 2007. The CMI WP is designed to describe the process that will be used to implement the corrective measures selected by the USEPA in the FDRTC as it pertains to the Refinery.
- **Supplemental Investigation Work Plan** (RETEC, 20002) was submitted in May 2002 and proposed field work to be conducted to obtain a better understanding of groundwater flow across the site, to better characterize the source and extent of non-aqueous phase liquid (NAPL) in known and unknown areas, complete delineation of groundwater impacts in both NAPL and non-NAPL areas, identify sources of acetone present at the site, and complete the RFI process.

- **Acetone Source Investigation Report** (RETEC, 2004) was submitted in April 2004 and presented information to explain the presence of acetone in groundwater samples.
- **SWMU 7 Investigation Report** (RETEC, 2004) was submitted in June 2004 and presents the results of an investigation conducted on the two SWMU 7 impoundments [equalization basin (EQB)] and storm water retention pond (SWRP)] that was conducted to complete the design for excavation of sludge from the EQB and SWRP. The investigation activities included: 1) conducting modified standard penetration tests to determine the firmness of the impoundment bottoms, 2) collecting soil samples for geotechnical tests to determine if materials beneath the sludge were competent for standard or low ground pressure excavators, 3) collecting soil samples for chemical analysis to determine the extent of impacts to soil beneath the sludge, and 4) information to respond to USEPA's June 2002 comment on the soil portion of the Human Health Risk Assessment (RETEC, 2001) as it relates to SWMU 7 and construction worker health and safety for the future excavation and remediation activities.
- **SWMU 6 Investigation Work Plan** (RETEC, 2006) was submitted in 2006 and proposed investigation activities to be performed in order to fill three main data gaps at SWMU 6: 1) saturated zone soil characterization, 2) surficial soil horizontal delineation, and 3) groundwater assessment.
- **Supplemental Investigation Report** (RETEC, 2007) summarized the results of this field work, and was submitted in July 2007.
- **SWMU 6 Investigation Report** (RETEC, 2007) was submitted and included a Human Health Risk Assessment for SWMU 6. This report presented the results of the SWMU 6 investigation and included recommendations for excavation.

2.4.2 SWMU and CAMU Design Work Conducted To Date

- **35% Design Report SWMU Remediation and CAMU Construction** (RETEC, 2002) was submitted in May 2002 and presented the design to guide the corrective actions required to mitigate impacts resulting from releases to the environment from several SWMUs and one AOC. The design presents the corrective measures to be implemented, including excavation of SWMUs and the AOC, and construction of the CAMU that would be used to manage excavated remediation wastes. This design was proposed to be completed in a single phase.
- **Revised CAMU Application** (RETEC, 2002) was submitted in November 2002 and provided information that enabled the Regional Administrator to designate a CAMU at the Refinery. This document included information on the remedial approach, including performance and design requirements of a CAMU, and a

general design description which included preparation of the CAMU, waste processing and placement, information on the CAMU cover, a stability analysis and storm water management information.

- **Design Input Investigation Work Plan** (RETEC, 2004) was submitted in June 2004 and presented field work that was conducted to supplement the 95% Design for SWMU excavation/CAMU construction work, and included a supplemental geotechnical analysis, berm stability analysis, cover stability analysis, CAMU limits determination, dredge spoil volume estimate, and delineation of non-aqueous phase liquid (NAPL) at well C-6 located in the northwest corner of CAMU West.
- **Stormwater Modeling Report** (RETEC, 2004) presented a comprehensive hydrologic model of storm water flow at the Refinery and supported the SWMU excavation/CAMU construction design. This report included associated modifications to the Refinery-wide storm water management system. The report reflected site conditions that are anticipated following construction of the CAMU to establish storm water settling basin hydraulics including capture of runoff from the CAMU cap and from restored SWMU excavation areas.
- **Design Input Investigation Report** (RETEC, 2005) presented the results from the design input investigation field work and was submitted in February 2005.
- **Design Basis Memorandum, Oily Water Sewer Reroute** (RETEC, 2005) was submitted in February 2005 and presented the design basis for rerouting portions of the below ground oily water sewer (OWS) in support of the proposed corrective action work. Because portions of the OWS lie within SWMU excavation areas and CAMU construction areas, it was necessary to abandon, reroute, or restore portions of the OWS.
- **95% Design Documents** (RETEC, 2005) were prepared to support the proposed SWMU excavation and CAMU construction. At this stage the design included a Performance Monitoring Plan (PMP), a Construction Quality Assurance Project Plan (CQAP) for CAMU construction and SWMU remediation, the Technical Specifications for the CAMU construction and SWMU remediation, a Response to USEPA Comments on 35% CAMU Design Report, a transmittal letter to the USEPA for the nine documents for the 95% Design Documents, and 95% Design Drawings. These were submitted in March 2005. This design was proposed to be completed in four phases.
- **Technical Specifications Oily Water Sewer Reroute** (RETEC, 2007) was submitted in May 2007.
- **OWS Reroute Construction Report** (ENSR, 2008) documented the work that was completed during the OWS reroute and was submitted in June 2008.
- **100% Design Documents** (RETEC, 2007) which included the 100% Design Drawings, Revised Performance Monitoring Plan, Revised Construction Quality Assurance Plan for CAMU construction and SWMU remediation, Revised

Technical Specifications for the CAMU Construction and SWMU Remediation, Design Input Investigation Report Addendum, Perimeter Air Monitoring Plan (PAMP). These were submitted in March 2007 to the USEPA. This design was proposed to be completed in four phases.

- **Revised 100% Design Documents** (RETEC, 2007) included the revised PMP, revised CQAP, and revised Technical Specifications for the CAMU construction and SWMU remediation and were submitted in August 2007.
- **Oily Water Sewer Cleaning Inspection Repair Work Plan** (RETEC, 2008) was submitted in January 2008, and describes the proposed activities to address infiltration that was observed during an inspection and cleaning of a portion of the below ground sewer that was conducted in 2001. The cleaning, inspection and repair (CI&R) activities satisfy certain requirements of the CMI SOW, the FDTRC, and Statement of Basis The CI&R activities are planned to start with the second phase of the SWMU excavation/CAMU construction work.

2.4.3 Groundwater Design Work Conducted To Date

- **Closure/Post Closure Groundwater Monitoring, Landfarms 10 and 12, Sampling and Analysis Plan** (RETEC, 1995) provided guidelines for groundwater sampling during and following closure of the landfarms, and was submitted in August 1995.
- **Phytoremediation/Hydraulic Control Pilot Study Approach** (RETEC, 2002) was submitted in May 2002 and presented a proposed groundwater remediation approach for several impacted areas of the Refinery.
- **CAMU Appendix C, Groundwater Management Plan (GWMP)** (RETEC, 2003) was submitted in September 2003, as an appendix to the CAMU Application. This groundwater monitoring plan describes the monitoring program that will be implemented during the operational period of the Yorktown CAMU and the closure/post-closure period of the regulated units. The objectives of the groundwater monitoring program were designed to serve as a protective measure to ensure that CAMU operations will not negatively impact existing groundwater quality.
- **Initial Network of CAMU Monitoring Wells** were installed in April 2001. Nine pairs of wells were installed on the perimeter of the CAMU, with one of the well pair installed into the upper aquifer (approximately 12 feet) and one well installed into the deeper aquifer (approximately 36 feet deep). In May 2003, an additional well pair was installed (wells CW712 and CW736), well nest CW3 was relocated and monthly CAMU gauging began.
- **CAMU Network Installation and Baseline Monitoring Assessment Report** (RETEC, 2007) summarized the results from the initial baseline groundwater monitoring event that was conducted in September 2001. As required in the

CAMU GWMP, a minimum of eight quarters of groundwater monitoring were required prior to calculation of the trigger values. To assure that CAMU operations do not result in additional impact to down gradient groundwater, a statistical assessment would be conducted on the baseline results and allow the comparison of down gradient CAMU target analyte concentrations to those obtained from the same wells prior to CAMU operations. An Addendum to this report is planned to be submitted September 2008.

- **Draft Maps and Tables to Support Groundwater Environmental Indicator** (RETEC, 2007) were submitted in January 2007. The data submitted supported the assertion the impacted groundwater was not migrating off site.

2.4.4 Interim Measures Conducted To Date

- **SWMU 11 and 12 Interim Measures Construction Report** (ThermoRetec, 1998) was submitted in December 1998. This report documented work that was competed in conjunction with the SWMU 11 and 12 Interim Measures Work Plan (RETEC, 1998) which provided detail on an interim measures proposed for SWMU 11 and SWMU 12 to pave the exposed soil of each SWMU. This IM was designed to be consistent with the final remedy for the SWMUs following completion of a CMS that included further assessment of SWMUs 11 and 12. Isolating SWMU 11 and SWMU 12 with asphalt pavement was the selected interim measures because soil in both SWMU 11 and SWMU 12 could potentially affect groundwater via leaching (based on comparison to Soil Screening Levels for groundwater), and soil could be contacted by workers and other terrestrial receptors. The asphalt pavement serves to minimize infiltration of precipitation, and also isolates SWMU 11 and SWMU 12 soils from potential receptors.
- **Interim Measures Report – Well CW3 Non-aqueous Phase Liquid Area** (RETEC, June, 2006) was submitted June 2006 and describes activities performed in the vicinity of well nest CW3. The purpose of this well nest was to monitor groundwater flow and geochemistry down gradient of the CAMU during the establishment of baseline conditions, the construction and operation of the CAMU, and the closure/post-closure period for Landfarms 10 and 12. The presence of non-aqueous phase liquid (NAPL) was suspected during the installation of this well nest in April 2001. Soil saturated with petroleum hydrocarbons was noted during installation and measurable quantities of NAPL were observed in the well casing of one well (CW312) soon after completion. The deep well of this well nest (CW348) was abandoned and replaced in a different location. The primary objective of the interim measures was to select an approach consistent with and equivalent to the groundwater remedy described in the Corrective Measure Study. An assumption implicit in the scope of the interim measures was that remedial activities were not planned for the CW3 NAPL Area, thus necessitating interim measures prior to implementation of the site-wide three-phase groundwater remedy.

2.4.5 Corrective Measures Construction Conducted To Date

Table 1 provides a status summary of each SWMU, AOC and CAMU associated with the CMI Order as of 30 June 2008. The following activities were conducted as part of the Phase I Corrective Measures:

- Construction and completion of CAMU East (formerly SWMU 3 and/or Landfarm 12);
- Excavation of impacted soils from SWMU 5 South located south of the east-west access road to the northern boundary of SWMU 3/CAMU East;
- Excavation and removal of the former American Petroleum Institute (API) separator at SWMU 7. Once the API structure was removed, impacted soil was excavated along the excavation sidewalls and beneath the former structure to an average elevation of -10 feet North American Vertical Datum (NAVD) with smaller areas as deep a -12 feet NAVD;
- Removal, excavation, dewatering, and rerouting of the below ground 48-inch OWS beneath CAMU East;

Material excavated from the OWS reroute project, berm subgrade, 48-inch OWS pipe removal, SWMU 7 API Separator demolition, and SWMU 5 South was placed into the CAMU East footprint.

Phase I Corrective Measures construction activities were documented in the following reports:

Corrective Measures Implementation 2007 Annual Progress Report
(RETEC, 2008) submitted in February 2008;

Oily Water Sewer Contents Removal Procedures letter report
(ENSR, 2008) submitted in April 2008;

Corrective Measures Implementation Quarterly Progress Report
(ENSR, 2008) submitted in May 2008;

OWS Reroute Construction Report
(ENSR, 2008) submitted in June 2008;

Phase I Corrective Measures Implementation Report
(ENSR, 2008) submitted in July 2008;

2.4.6 Lessons Learned from 2007-2008 Construction

Using the experience gained during completion of CAMU Phase I construction activities, Western conducted a "lessons learned" process in order to identify and resolve any

issues prior to initiating subsequent CMI construction phases. Key aspects of the project were reviewed and included administrative functions, technical aspects, and construction delivery and fulfillment. The results of this review were summarized by Western in a letter dated 6 June 2008 to the USEPA which identified several alternatives to improve the overall project.

Key aspects identified for review included:

- Minimizing risks to the project and to the refinery;
- Improving overall project schedule and implementation;
- Improving project cost estimates;
- Improving groundwater remediation plan;
- Improving chain of communication;

The following specific project elements were identified as having significant potential to improve key aspects of the project:

- **Consolidation of Construction Phases:** Streamline and expedite the project by performing each of the next three planned phases of closure (Phases II, III, and IV) as a single construction operation (Phase II). This will eliminate redundant activities associated with each phase (e.g. procurement and mobilization).

- **On-Site Soil Borrow:** Use available on-site fill material as backfill or structural fill versus purchasing the vast majority of backfill from an off-site source. Using available fill material from the Refinery property will minimize the amount and cost of imported fill, reduce the number of trucks traveling to and from the off-site borrow source, and reduce the potential for traffic accidents.

- **Elimination of Solidification in SWMU 7:** Evaluate dredging the SWMU 7 areas versus in-place solidification of SWMU 7 areas (EQB, FBP, and SRP). This will minimize the amount of waste to be placed in the CAMU West as admixtures will not be needed prior to removing impacted soil to the CAMU West. Dredging will also take less project construction time in these SWMU areas and is also more cost-effective than using in-place solidification.

- **Improve Construction Cost Estimates For Better Planning:** Cost estimates will be provided to the Refinery by an environmental construction firm during the design aspects of the consolidated Phase II work. The Refinery will be able to better plan earlier in the project and this will reduce the overall cost to the project.

- **Improve Project Chain Of Communication to Ensure Key Elements of the CMI Order are Met:** This will improve the overall project delivery and will ensure project requirements are met in a timely fashion.

3.0 Corrective Measures Implementation Order

The Statement of Purpose presented in Section III of the CMI Order is quoted below:

"In entering into this Consent Order, the mutual objectives of USEPA and Respondent are the protection of human health and/or the environment through: (1) the implementation of the corrective measures described in USEPA's Final Decision and Response to Comments, dated March 31, 2004 (collectively referred to herein as the "FDRTC"), incorporated hereto and made a part hereof as Attachment A, as it pertains to the Facility, and, (2) the performance of Interim Measures ("IM") at the Facility to prevent or mitigate threats to human health and/or the environment."

The work to be performed is outlined in Section VI of the CMI Order and lists the tasks that are required for inclusion into the CMI WP. The USEPA developed the CMI SOW (USEPA, 2004) to guide the content of this work plan.

As summarized in Table 1, the Refinery has completed a significant portion of the CMI design process and corrective measures construction to support the remediation of contaminated soils and sediment. The groundwater remediation has been developed conceptually as described in the Risk Assessment and Corrective Measures Study Report (RA/CMS) (RETEC, 2001) and will include three phases. The Refinery is at different stages of planning and/or performing additional remedy support tasks that are necessary to complete the design of the soil/sediment excavation and restoration (SWMU 6, SWMU 7, BCP, Salt Marsh Outfall evaluation) or identify groundwater sources (below ground OWS inspection, cleaning, and repair [IC&R] project), to support future design of groundwater remediation system(s).

The following sections provide a short description of each component identified in Section VI of the CMI Order that will be completed at the Refinery.

3.1 Corrective Measures Work Plan and Design

3.1.1 Corrective Measures Implementation Work Plan

A CMI WP is designed to describe the process that will be used to implement the corrective measures selected by the USEPA in the FDRTC as it pertains to the Refinery. This revised CMI WP is an update to the most recent CMI WP (RETEC, 25 October 2007) and incorporates remediation progress to date and revisions to the conceptual design for remaining work.

According to Task I of the CMI SOW, the CMI WP is made up of five interdependent plans presented in this report as follows:

- Management Plan [(MP), Appendix A];
- Community Relations Plan [(CRP), Appendix B];
- Sampling and Analysis Plan [(SAP), Appendix C];
- Corrective Measures Permitting Plan [(CMPP), Appendix D];
- Supplemental Field Investigation Work Plan [(SIWP), Appendix E];

The MP is presented in Appendix A and will:

- Document the overall strategy for performing the design; construction; and operation, maintenance, and monitoring of corrective measures;
- Describe the key personnel and organizations that will be implementing the corrective measures and define the responsibility and authority of each entity. The specific qualifications of any key personnel will be discussed;
- Provide a detailed schedule that identifies project milestones defined in the CMI Order, for both engineering tasks and the groundwater remedy;
- Describe how the remedial approach for each area will meet the technical requirements set forth in the CMI Order;

The CRP is presented in Appendix B. This plan describes the approach that will be used to keep the community informed of corrective measures progress as well as provide opportunities for the public to participate in the corrective action decision process at the Refinery.

The SAP Addendum is presented in Appendix C and has been developed as a supplemental document to the original SAP (ThermoRetec, 1999) developed for the Phase II RFI. These documents provide guidance for data collection to support the delineation of, or design for, the remedial actions proposed for the site. The activities at the Refinery fall under several regulatory agencies; therefore, the investigation of contaminants at the site can be guided by different plans and/or regulations. In order to streamline the submittal of this revised CMI WP, the RETEC revised SOPs, which have been reviewed and approved by the USEPA, are included as attachments to the SAP addendum. These SOPs along with their subsequent forms (e.g. sample labels, test pit logs) will be updated for future submittals.

The CMPP is presented in Appendix D and summarizes the federal, state, and local permits and approvals that will be required to implement the corrective measures selected for the Refinery.

CMI support activities to be conducted prior to and during the completion of corrective measures include supplemental field investigation activities required to support the design of remedial actions. Investigation activities will include sampling, monitoring, data analysis, and reporting specific to each event. Separate work plans and reports will be developed for investigations that will be conducted to support the remedial design.

Accordingly, Western submitted two supplemental field investigation work plans to the USEPA, dated 17 September 2008. These work plans are included in Appendix E:

1. Planned Sampling Activities for On-site Backfill Active and Former Dredge Spoils and Soil Stockpile Area;
2. Construction Characterization Activities for SWMU 5 North and SWMU 6;

Additionally, a work plan for SWMU 7 Dredging and Dewatering, dated 30 September 2008, was submitted under separate cover. Other work may be needed and will be documented in separate work plans.

The QAPjP Addendum is presented in Appendix F and expands upon quality assurance/quality control (QA/QC) protocols established in the original Quality Assurance Project Plan (ThermoRetec, 1999) developed for the Phase II RFI. The QAPjP Addendum will incorporate activities identified in the CMI WP.

3.1.2 Corrective Measure Design – Soil and Sediment

Corrective measures for the Refinery as presented in the Statement of Basis and FDRTC include remediation of soil and sediment at SWMUs, one AOC, and construction of CAMU East and CAMU West. Following the approval by the USEPA of this revised CMI WP, the CMI design will prepared according to Task II of the CMI SOW. The first component of the CMI Design is a 30 percent (%) CMI Design Report that includes at a minimum, a list of plans and specifications.

Documents submitted for the Phase I CAMU East corrective measures construction activities already completed at the Refinery included the following:

- Phase I Construction Plans (100% Design) for the Corrective Action Management Unit Construction and Solid Waste Management Unit Remediation (RETEC, 2007);
- Technical Specifications (100% Design) for the Corrective Action Management Unit Construction and Solid Waste Management Unit Remediation (RETEC, 2007);

- Construction Quality Assurance Project Plan for Corrective Action Management Units and Solid Waste Management Unit Restoration (RETEC, 2007);
- Site-Specific Health and Safety Plan—Amendment 9 (RETEC, 2007);
- Performance Monitoring Plan (RETEC, 2007);
- Perimeter Air Monitoring Plan (RETEC, 2007);
- Stormwater Modeling Report (RETEC, 2004);
- Design Input Investigation Report (RETEC, 2005) and Design Input Investigation Report Addendum (RETEC, 2007);
- 100% Design Plans and Specifications for the Below Grade Oily Water Sewer Reroute (RETEC, 2007);
- Remediation cost estimate;

For the upcoming Phase II corrective measures construction activities (CAMU West), the design will be submitted to the USEPA for review and approval prior to CAMU West construction. Documents to be submitted for Phase II include the following:

- Phase II Design Summary Report;
- Phase II Construction Plans for the Corrective Action Management Unit Construction and Solid Waste Management Unit Remediation;
- Technical Specifications for the Corrective Action Management Unit Construction and Solid Waste Management Unit Remediation (RETEC, 2007, with revisions as required);
- Construction Quality Assurance Project Plan for Corrective Action Management Units and Solid Waste Management Unit Restoration (RETEC, 2007, with revisions as required);
- Site-Specific Health and Safety Plan (under revision);
- Performance Monitoring Plan (RETEC, 2007, with revisions as required);
- Stormwater Modeling Report (RETEC, 2004 with revisions as required);
- OWS CI&R;
- Remediation cost estimate for Phase II (CAMU West and groundwater remedy);

3.1.3 Corrective Measure Design – Groundwater Remediation

The groundwater remedy for the Refinery consists of three phases as required by the FDRTC. The three phases cover all aspects of groundwater remediation including:

1. Source Control and Monitoring;
2. Groundwater Characterization;
3. Groundwater Restoration;

However, due to the localized nature of specific groundwater plumes and ongoing corrective action activities in various portions of the site, the phases are not necessarily implemented in chronological order. For example, Phase Two activities may be initiated in one area while Phase One activities continue in another. In general, however, site-wide groundwater restoration activities will conclude with Phase Three activities. The requirements of each phase are identified below.

Phase One - Source Control and Monitoring is ongoing and consists of the following activities to address short-term groundwater protection:

- Contaminant source removal via routine NAPL removal activities consistent with the VDEQ AST Program;
- SWMU excavation, CAMU construction, and planned CI&R of the below ground OWS;
- Compliance monitoring;
- Institutional controls (ICs);

Routine groundwater compliance monitoring activities are ongoing as part of the monthly VDEQ AST leak detection monitoring program and the semi-annual permitted Industrial Waste Landfill (IWL) monitoring. In addition, groundwater monitoring has been established for the construction and operation of the CAMU, as well as the post-closure monitoring for the CAMU and former Landfarms 10 and 12.

Phase Two – Groundwater Characterization Phase Two activities consist of plume evaluation and refining the ongoing compliance monitoring and NAPL recovery programs. The USEPA has established two near-term goals, termed Environmental Indicators (EIs) for the site. The EIs are:

1. Current human exposures under control;
2. Migration of contaminated groundwater is under control;

In 2007, the Refinery achieved a positive determination for both EIs indicating human exposures were under control and migration of contaminated groundwater was under control at the Refinery. The positive EI determination was achieved without hydraulic control suggesting that natural attenuation processes have been effective in controlling plume migration. Points of compliance (POCs) will be established for monitoring groundwater conditions to demonstrate that positive EI determinations are maintained and remediation goals are achieved. Groundwater monitoring will be refined as needed to gain a better understanding of groundwater flow across the site and complete the assessment of groundwater impacts.

Phase Three – Groundwater Restoration Phase Three includes the evaluation and application of long-term groundwater remedies as needed to meet the remedial goals of the project. Groundwater characteristics will be reassessed after source removal activities are completed and groundwater conditions have stabilized. The positive EI determination suggests that monitored natural attenuation is effective in controlling plume migration and will ultimately be effective in restoring groundwater quality. Procedures for conducting the reassessment, potentially applicable remedies, and procedures for remedy selection will be documented in a work plan.

Routine monitoring of the CAMU, IWL and AST Program monitoring will continue in Phase Three, and a long-term monitoring program will be implemented to assess the progress of groundwater restoration. Preventing future releases will involve CAMU maintenance and monitoring, and maintaining refinery operating procedures designed to prevent releases to the environment.

3.1.4 Corrective Measure Construction – Soil and Sediment

3.1.4.1 CAMU East

As summarized in Section 2.4.5 of this revised CMI WP, CAMU East was completed as part of the Phase I construction activities in early 2008. CAMU East (formerly Landfarm 12 and SWMU 3) contains impacted soils and debris which were excavated from the southern area of SWMU 5, the SWMU 7 former API Separator, and the excavation and reroute of the belowground OWS beneath CAMU East. These Phase I construction activities were summarized in the Phase I Corrective Measures Implementation Report (ENSR, 2008).

3.1.4.2 CAMU West

Soil and sediment corrective measures for CAMU West will be implemented as part of the planned Phase II construction activities upon USEPA approval of this revised CMI WP and subsequent CMI Design Reports. A preconstruction meeting and site inspection will be held prior to initiating significant corrective measures. During CAMU West construction, periodic inspections will be conducted to monitor the construction

and implementation of remedial actions. When construction is complete, a CAMU West post construction meeting and final inspection will be performed to ensure construction work is complete and consistent with the USEPA-approved documents and corrective measures.

Upon completion of Phase II construction activities, a CAMU West CMI Report including construction certification and as-built drawings will be submitted to the USEPA for approval. From this CAMU West CMI Report, the USEPA will ensure construction is complete and consistent with the USEPA-approved Final CAMU West CMI Design Report.

4.0 Design Elements

This section describes the design of corrective measures that will be implemented to address COCs identified in soil, sediment, and groundwater, and how corrective measures are expected to meet the technical requirements of the FDRTC (USEPA, 2004).

4.1 CAMU Design and Construction

4.1.1 CAMU Regulatory Summary

Corrective measures proposed for the Refinery focus primarily on source removal and source control through excavation, consolidation, and capping of impacted materials in conjunction with groundwater remediation and monitoring. Remediation of contaminated soil and sediment at the Refinery will primarily rely on the construction of a CAMU to manage and provide long-term control of remediation wastes generated during corrective measures. Implementing the CAMU will be done in compliance with the CAMU requirements set forth in 40 CFR Section 264.552(c). The seven criteria for implementing a CAMU in accordance with federal regulations are as follows:

1. The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;
2. Waste management activities associated with the CAMU shall not create unacceptable risks to humans or the environment resulting from exposure to hazardous wastes or hazardous constituents;
3. The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility;
4. Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases to the extent practicable;
5. The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;
6. The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance long-term effectiveness of remedial actions by reducing toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU;
7. The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU;

These criteria will be met by performing SWMU remediation and CAMU construction activities per the final Corrective Action Management Unit Application (RETEC, 2002). These activities are briefly summarized below.

4.1.2 CAMU Design Completion

Section VI. Subpart B-1 of the Order identifies the documents that will regulate the construction of corrective measures selected for the Refinery in the FDRTC. These documents include:

- The CMI SOW,
- The schedule set forth in the USEPA-approved CMI WP;
- The USEPA-approved 90% CMI Design Report (with complete plans and specifications);

CAMU construction and SWMU excavation is being implemented in a phased approach. The Refinery prepared and submitted a 100% Design Document Package for Phase I of the SWMU Remediation and CAMU Construction on 30 March 2007. The 100% Design Document Package integrates the designs for SWMU remediation, CAMU construction, storm water management, and tie-ins to existing Refinery infrastructure.

A written procedure or plan of work will be prepared by the subcontractor as part of the corrective measures process to specify how the subcontractor will implement the corrective measures. The written plan will be submitted to the USEPA solely for informational purposes only. The written plan is not intended to replace the 100% Design Document Package as the subcontractor's field procedures may change throughout the construction process. The USEPA-approved 100% Design Document Package, and the USEPA-approved CMI WP will make up the Final CMI Design Report.

The construction subcontractor will manage SWMU remediation and CAMU construction activities. The subcontractor's construction manager will be responsible for implementing work activities in accordance with the bid design plans and specifications. Construction quality assurance will be provided by a selected subcontractor to ensure compliance with the design.

4.1.3 CAMU Construction

CAMU East was constructed at Landfarm 12 and CAMU West will be constructed at Landfarm 10. Landfarms 10 and 12 are inactive land treatment units designated by the USEPA as SWMUs 1 and 3. By designating the landfarms as a CAMU, these units will be considered closed under the provisions of the Virginia Hazardous Waste Regulations as described in the Modified Closure Plan, Landfarms 10 and 12 (ThermoRetec, 1999). This approach is an effective way to consolidate remediation waste, maximize the benefit of the landfarm cap, and minimize the area in which waste remains in place at the Refinery.

4.1.3.1 CAMU East

As summarized in Section 2.4.5 of this revised CMI WP, CAMU East was completed as part of Phase I construction activities in early 2008. CAMU East (formerly Landfarm 12 and SWMU 3) contains impacted soils and debris which were excavated from the southern area of SWMU 5, the SWMU 7 former API Separator, and the excavation and reroute of the below ground OWS beneath CAMU East. These Phase I construction activities were summarized in the Phase I Corrective Implementation Report (ENSR, 2008).

4.1.3.2 CAMU West

Phase II corrective measures includes the design and construction of the CAMU West, which is presently designated as SWMU 1 and located at Landfarm 10.

CAMU West will be the final repository of materials from the following SWMUs, AOC, sediments from a limited area of BCP, and remaining OWS work:

- SWMU 2 Landfarm 1;
- SWMU 5 (North) Former API Separator Sludge Pits (North portion);
- SWMU 6 Former Landfill;
- SWMU 7 Filter Backwash Pond;
- SWMU 7 Storm Water Retention Pond;
- SWMU 7 Equalization Basin;
- SWMU 8 Leaded Tank Bottoms Area "hot spot" removal;
- SWMU 9 Unleaded Tank Bottoms Area;
- SWMU 10 Former Heat Exchanger Bundle Cleaning Pad;
- AOC 1 North Coker Ditch;
- BCP Bull Creek Pond (limited excavation area);
- OWS Oily water sewer CI&R sediments and removal of selected sections;

With the exception of the OWS, the above referenced areas designated for excavation along with the proposed Phase II CAMU West are illustrated on Figure 3. The sections of the OWS which are going to be cleaned, inspected, and repaired are illustrated on Figure 4. Selected sections of the OWS to be removed are also illustrated on Figure 4 and this work will be finalized as part of the design for CAMU West. The estimated volumes of impacted material to be removed from the above areas are summarized in Table 2.

Figure 5 illustrates the preliminary design of the final cover in CAMU West. These preliminary contours will be adjusted during the upcoming design of CAMU West.

For CAMU West, a written plan will be prepared by the remediation subcontractor and will specify the remediation subcontractor's field procedures used to implement the corrective measures. The written plan will be submitted to the USEPA solely for information purposes, and will be considered an execution plan only. This written plan will not be considered part of the 100% Design Documents.

CAMU West will incorporate NAPL-saturated soil and sediment and other contaminated materials. The concept is to place the more contaminated materials in the CAMU cell at higher elevations in an effort to minimize potential impacts to groundwater beneath the site. Details of SWMU remediation and CAMU construction are discussed in Section 4.2 of this report. The total volume of remediation waste to be incorporated in CAMU West from the units listed above is estimated at approximately 115,000 cubic yards (cy) (Table 2).

Restoring excavated areas will include backfilling with acceptable fill material. Backfill sources will be analyzed for VOCs (EPA Method 8260), semi-volatile organic compounds (SVOCs) (EPA Method 8270), metals [USEPA Method 1311 for toxicity characteristic leaching procedure (TCLP) and USEPA Method 3050 for Total Metals], pesticides (USEPA Method 8081A) and polychlorinated biphenyls (Method 8082) using standard reporting limits.

Acceptance criteria for the fill are Statement of Basis risk-based remediation goals (RBRGs), Statement of Basis Soil Screening Levels (SSLs), USEPA Region III Industrial Risk-Based Criteria and TCLP results that meet the criteria established in 40CFR 261.24 (see construction specification 02300). Impacted soil and sediment placed in CAMU West will be capped using a low-permeability hybrid cap. The impoundment cap for CAMU West will have the same construction profile and details as used for the USEPA approved cover on CAMU East.

As previously discussed, several documents and deliverables will be prepared as part of the CMI process. During SWMU remediation and CAMU construction, daily logs and reports of construction activities will be prepared for the project file. At the completion of remedial construction, a CMI Completion Report will be prepared and submitted to the USEPA and the VDEQ documenting the final remediation of the SWMUs and construction of the CAMU, including the approved landfarm closure cap design.

Post-closure maintenance of the CAMU will be completed in accordance with the VDEQ-approved Modified Closure Plan, Landfarms 10 and 12 (ThermoRetec 1999). Long-term groundwater monitoring of the CAMU will be completed using the in-place CAMU well network currently monitored and will be conducted in accordance with the Corrective Action and Management Unit and Landfarms 10 and 12 Groundwater Monitoring Plan (RETEC, 2003) provided as Appendix C of the CAMU Application. If significant groundwater impacts are detected via this network, additional corrective measures may be required. Guidelines for long-term cap monitoring will be contained in

the Cap O&M Manual that will be submitted to the USEPA for review at the end of CAMU West construction.

4.1.4 Monitoring Well Abandonment

Several groundwater monitoring wells located within and adjacent to SWMU 1 (proposed CAMU West) and SWMUs selected for Phase II excavation may be destroyed during construction and soil removal activities. Therefore, these wells will be properly abandoned approximately 90 days prior to initiating Phase II construction activities.

The Well Abandonment Work Plan (RETEC, revised October 2007) for the refinery is included as Appendix G. This plan provides a list of wells to be abandoned, proposed abandonment methods based on well construction and/or the presence of NAPL in a well, and documentation and reporting procedures. Table 3 of this revised CMI WP is an updated status summary of monitoring wells abandoned prior to Phase I (CAMU East) construction activities, and those that are proposed to be abandoned prior to Phase II (CAMU West) construction activities.

4.1.5 Below Ground OWS Reroute

The below ground OWS was constructed in 1956 and served as the Refinery's process sewer until 1990, when the Refinery's above ground sewer was constructed and placed into operation. Figure 4 shows the location of the existing, abandoned and excavated portions of the below ground OWS at the Refinery. Additional portions of the below ground OWS will be excavated as part of Phase II Corrective Measures construction.

A Design Basis Memorandum Oily Water Sewer Reroute (RETEC, 2005) was submitted for the reroute of a portion of the below ground OWS from sewer box SB60 to the OWS Sump. This design was completed in April 2007 and work was completed during construction of CAMU East.

The work included the following:

- Removal of the portion of the below ground OWS beneath CAMU East (Landfarm 12). This was completed as part of Phase I construction activities;
- Removal of the portion below CAMU West (Landfarm 10);
- Cleaning, plugging, and abandoning the OWS under First Street at the Avenue C intersection and from the Second Street and Avenue C intersection to the OWS Sump;

At the completion of the below ground OWS reroute construction, the Refinery will continue with the CI&R of the remaining below ground OWS through 2010.

4.2 Phase II SWMU and AOC Remedy and Design Summary

Table 1 summarizes the corrective actions identified for each SWMU and AOC 1 as required in the Statement of Basis and by the FDRTC and provides the status as of 30 June 2008. This section discusses the approach for implementing the selected remedies. Details of SWMU remediation and CAMU West construction will be presented in the CMI Design Report.

Excavation of NAPL / petroleum-impacted soil will be conducted to meet the project requirements, with appropriate modifications due to site constraints. If suspect NAPL or petroleum-impacted material is discovered at an excavation horizontal or vertical boundary, the Site Engineer or QA/QC personnel will evaluate the suspect NAPL first by observing visual staining associated with hydrocarbon odors, elevated PID readings, an oily residue on nitrile gloves, or laboratory test results on the soil material. If it is determined that NAPL is re-entering the excavation via the groundwater and not associated with soil impacts, excavation vertically will be stopped and these impacts identified and documented for inclusion in the site-wide groundwater remedy.

To facilitate excavation procedures in the field, a decision rule flow diagram was prepared. Figure 6 schematically illustrates the process to be followed in the field when NAPL / petroleum-impacted material is encountered in an excavation. This figure will be incorporated into a technical specification that will be submitted with the Phase II design documents to address NAPL / petroleum-impacted material encountered in excavation areas.

4.2.1 SWMU 5 (North)

Remedial actions for Phase II of SWMU 5 North consist of excavating the former sludge pit area between the SWMU 7 SWRP and north of the access road [68,000 feet squared (ft^2)]. Soil excavation will extend vertically to the Mean Seasonal Low Groundwater Table (MSLGT). Over excavation of potentially impacted soil in the floor and walls of the excavation will be limited laterally by physical constraints (ASTs, utilities, sheet pile wall) and administrative boundaries of adjoining units (e.g. SWMU 6) and vertically by the MSLGT.

The proposed limits of excavation for SWMU 5 North include the area surrounding well CW312, which has previously contained dense non-aqueous phase liquid (DNAPL). As stated in the CQAP (RETEC, 2007) and the Interim Measures Report—CW3 NAPL Area (RETEC, 2006), visual inspection methods will be utilized to ensure the removal of all NAPL-saturated soils to the extent practicable. Accordingly, excavation activities may proceed lower than the MSLGT if process residual and/or NAPL are observed, and excavation conditions support additional excavation.

Construction dewatering methods may be required for the removal of soils present below the current groundwater table. However, the excavation of soil significantly

deeper than the MSLGT at the CW312 NAPL Area would require impractical dewatering and shoring operations. In addition, as specified in the CQAP, excavation activities cannot progress into areas that would affect the stability of existing infrastructure. Thus impacted soil observed in the excavation sidewall near the wastewater treatment plant components at the west end of the excavation will not be removed. The final depth and lateral extent of excavation within the CW312 NAPL Area will be determined by field conditions based on observed groundwater depth, soil type, and limits of the engineering controls.

As outlined in the PMP, documentation and verification samples will be collected to document residual soil concentrations and ensure protection of future construction workers and to determine the limits of excavation. Verification samples will be compared to the SWMU 5/7 SSLs provided in Table 2A of the Statement of Basis. If the results of the documentation samples exceed the clean-up levels for this SWMU then potential groundwater remedies will be evaluated. The excavated material will be included in the CAMU West impoundment. The excavation areas will be backfilled with suitable fill material to above the Mean Seasonal High Groundwater Table (MSHGT). The final elevation for the backfill will be determined as part of the design.

4.2.2 SWMU 8

SWMU 8 consists of the ASTs and associated berms for Tanks 608, 609, 610, 611, and 619. Formerly, these tanks were used to store leaded gasoline. Tank cleaning operations conducted during this time included removing the leaded tank bottoms and depositing them in pits located inside the tank berms. These operations were conducted approximately once every 10 years during this period.

In accordance with the Statement of Basis, FDRTC, and CMI design, the corrective action for SWMU 8 consists of excavating "hot spots" located inside the berms of Tanks 608, 609, and 619. The horizontal limits of excavation at each "hot spot" will be approximately 4 feet by 4 feet and extend vertically to 3 feet bgs. The total excavation volume for the "hot spots" is approximately 7 cubic yards.

If NAPL is encountered during excavation, the corrective action will include removing the NAPL-impacted soil as described above. The excavated soil will be managed in the CAMU West. As described in detail in the PMP, prior to backfilling, verification soil samples will be collected from the floor and sidewalls of each excavation area. Verification samples will be compared to the SWMU 8 SSLs to confirm the limits of excavation. If the results of the verification samples exceed the clean-up levels and further excavation is obstructed, potential groundwater remedies will be evaluated. Based on the process identified on Figure 6, the excavation areas may be over excavated and the excavations will be backfilled with suitable fill material to original grade.

4.2.3 SWMU 7 Storm Water Retention Pond

The SWRP is one of three man-made ponds that are part of SWMU 7 and the SWRP is located at the northeast corner of the Refinery. The SWRP is bound to the east by an access road and facility fence line that borders the woods at the east end of the property. The southern extent of the pond is bound by a row of sheet piling that separates the SWRP from SWMU 5 North, the northern end is separated from the SWMU 7 EQB by an earth berm, and the SWMU 7 FBP is located between the west side of the SWRP and First Street.

The SWRP is an unlined structure with an operating depth of approximately 5 feet bgs. The dimensions of the pond are approximately 450 feet by 390 feet, which includes the sloped sides of the pond covered by rip-rap. The SWRP was also a primary unit of the wastewater treatment plant (WWTP) from the beginning of Refinery operations to 1990, when it was taken out of service and replaced with ASTs. Sludges from the SWRP were removed in 1969 and again in 1976. The excavated sludge material was placed in either Landfarm 10 and/or the IWL (SWMU 4); these sludges have since been removed from the units.

As detailed in the Statement of Basis, FDRTC, and CMI design, the corrective action for the SWRP consists of excavating sludge and impacted soil to the impoundment bottom (native material) and includes 1-foot excavation of the sloped sidewalls at the unit boundary.

Based on the results of the SWMU 7 Dredging and Dewatering Evaluation (Opal, September 2008), this material will be dredged followed by mechanical drying methods. Prior to placing the dredged and dried material into the CAMU West, the soil and sediment will meet CAMU acceptance criteria (i.e. pass the paint filter press). A pilot-scale test of the dredging and drying will be conducted prior to full scale operations to demonstrate the ability to dredge the soil and sediment from SWMU 7 SWRP.

A pilot-scale test of the dredging and drying will be conducted prior to full scale operations to demonstrate the ability to dredge the soil and sediment from SWMU 7 SWRP. Debris that may be encountered will be reduced so that no piece is larger than 2 feet in any dimension. Piping will be crushed, cut in half lengthwise, or if a small diameter, securely plugged in lieu of crushing, and placed into the CAMU. The total extent of area to be excavated is approximately 173,000 ft^2, or 3.97 acres. As described in the PMP, the excavation is limited by unit boundaries and physical constraints; and, therefore, post-excavation soil samples will be collected for documentation purposes. The documentation samples will be compared to the clean-up levels for this SWMU. If the results exceed these limits, then potential groundwater remedies will be evaluated as appropriate. The excavation will be backfilled with fill material to above the MSHGT. The final elevation for the fill will be determined as part of the design.

4.2.4 SWMU 7 Equalization Basin

The SWMU 7 EQB is one of three man-made ponds and is located at the northeast corner of the Refinery. The EQB is bound to the east by an access road and facility fence line that borders the woods and tidal marsh area at the east end of the property. The southern extent of the pond is separated from the SWRP by an earth berm, the northern end is bound by an access road that separates the EQB from the settling basin, and several buildings/structures and a transformer are located between the west side of the EQB and First Street.

The EQB is an unlined structure and the dimensions of the basin are approximately 450 feet by 120 feet, which includes the sloped sides of the basin covered by rip-rap. The EQB was a primary unit of the WWTP from the beginning of the Refinery operations to 1990, when it was taken out of service and replaced with ASTs. Sludge from the EQB has been removed on two separate occasions, once in 1969 and again in 1976. The excavated sludge material was placed in either Landfarm 10 and/or the IWL (SWMU 4); these sludges have since been removed from the units.

Per the Statement of Basis, FDRTC, and CMI design, the corrective action for the EQB consists of excavating sludge and soil to the impoundment bottom (native material) and includes 1-foot excavation of the sloped sidewalls at the unit boundary. The total extent of the area to be excavated is approximately 54,800 ft^2, or 1.26 acres.

Based on results of the SWMU 7 Dredging and Dewatering Evaluation (Opal, September, 2008), the Refinery intends to dredge the SWMU 7 EQB followed by mechanical drying until the soil and sediment passes the CAMU acceptance criteria (i.e. paint filter test). When the soil and sediment meet the CAMU acceptance criteria, the soil and sediment will be placed in the CAMU West impoundment.

A pilot-scale test of the dredging and drying will be conducted prior to full scale operations to demonstrate the ability to dredge the soil and sediment from SWMU 7 EQB. Debris found within SWMU 7 EQB will be reduced so that no piece is larger than 2 feet in any dimension. Piping will be crushed, cut in half lengthwise, or if a small diameter, securely plugged in lieu of crushing, and placed into the CAMU West. The excavation area in SWMU 7 EQB is limited by unit boundaries and physical constraints; and, therefore, post-excavation soil samples will be collected for documentation purposes. If the results of the documentation samples exceed clean-up levels for this SWMU then potential groundwater remedies will be evaluated. The excavation will be backfilled with fill material to above the MSHGT. The final elevation for the fill will be determined as part of the design.

4.2.5 SWMU 7 Filter Backwash Pond

The SWMU 7 Filter Backwash Pond (FBP) is one of three man-made ponds that are part of SWMU 7 and is located at the northeast corner of the Refinery. The FBP is

bordered to the east by the SWRP, to the north by an open grassed area containing underground utilities, to the west by First Street, and to the south by ASTs for the activated sludge plant. The FBP is an unlined structure with sloped sides covered by concrete.

Prior to 1990, the FBP received flow from backwashing the preliminary and final filters of the WWTP. The preliminary filter operated prior to biological treatment. After 1990, aggressive biological treatment was implemented for all flow upstream of the FBP. Sludges in the FBP were removed once in approximately 1977 and placed in Landfarm 10. Water from the FBP currently flows to the backwash clarifier and is recycled through the biological portion of the WWTP.

As described in detail in the Statement of Basis, FDRTC, and CMI design, the corrective action for the FBP includes demolition of the concrete structure and equipment. Impacted soil and sludge will be excavated vertically to the MSLGT beneath the impoundment bottom and laterally to the unit boundary. As described above, additional excavation may be required. The decision to excavate additional material will be made based on the decision flowchart illustrated in Figure 6.

During excavation activities for this SWMU 7 FBP, the soil between the SWRP and FBP (approximately 9,260 ft^2) will also be excavated to the MSLGT. The total extent of area to be excavated is approximately 28,260 ft^2, or 0.65 acres.

Where possible, this material will be dredged followed by mechanical drying. A pilot-scale test of the dredging and drying will be conducted prior to full scale operations to demonstrate the ability to dredge the soil and sediment from SWMU 7 FBP. Debris will be reduced so that no piece is larger than 2 feet in any dimension. Piping will be crushed, cut in half lengthwise, or if a small diameter, securely plugged in lieu of crushing, and placed into the CAMU West impoundment. As discussed in the PMP, verification and documentation soil samples will be collected to document residual soil concentrations and ensure the protection of future construction workers and to determine the limits of excavation. Verification sample results will be compared to the SWMU 7 SSLs to confirm the limits of excavation. If the results of documentation samples exceed the clean-up levels for this SWMU then potential groundwater remedies will be evaluated, if necessary. The excavation will be backfilled with clean fill material to above the MSHGT. The final elevation for the fill will be determined as part of the design.

4.2.6 SWMU 2

Between 1977 and 1980, SWMU 2 (Landfarm 11) was used in the land treatment of Refinery wastes. The unit is surrounded by earth berms on all four sides and a storm water ditch system to control run-off. SWMU 2 is located directly between Avenue E (south) and Avenue D (north), west of Second Street.

As detailed in the Statement of Basis, FDRTC, and CMI design, corrective action for SWMU 2 consists of removal of the surface soil from the eastern portion of the unit. The material will be excavated from ground surface to approximately 1 to 2 feet bgs depending on topography.

The proposed excavation for SWMU 2 encompasses the eastern half of the unit, which is approximately 232,000 ft^2, or 5.33 acres. The lateral extent of the proposed excavation is limited by the unit boundary. As outlined in the PMP, 11 verification samples will be collected from the excavation floor for laboratory analysis. Verification samples will be compared to the SWMU 2 risk-based remediation goals (RBRGs) to confirm the limits of excavation. The excavated material will be managed in CAMU West and backfill will be placed into the excavated areas to grade.

4.2.7 SWMU 9

Unleaded tank bottoms from decanted oil Tank 405 were deposited within the firewalls of Tank 110 in August 1982. The tank bottoms were disked into soil periodically to promote biodegradation. SWMU 9 is located in the southwest corner and inside the berm of Tank 110 in the southwestern portion of the Refinery.

As described in the Statement of Basis, FDRTC, and CMI design, the corrective action for SWMU 9 consists of removing surface soil to the unit boundaries. The SWMU material will be excavated from the ground surface to approximately 1 foot bgs. The excavation for SWMU 9 encompasses a trapezoidal area approximately 171,000 ft^2, or 3.93 acres. The lateral extent of excavation is limited by unit boundaries (berms) on the south and west sides, and physical constraints (Tank 110) to the northeast.

Soil samples at SWMU 9 were obtained to verify the limits of excavation not previously determined during RFI activities. The results of the preconstruction verification sampling event conducted in November, 2006 were used to determine the limits of excavation for the northeast portion of SWMU 9. These results are presented in the final PMP. Soil samples collected during the Phase II RFI will serve as documentation samples for SWMU 9; therefore, no floor samples will be collected from the excavation. The excavated material will be managed in the CAMU West impoundment, and backfill will be placed into the excavated areas to original grade.

4.2.8 SWMU 10

The heat exchanger bundle cleaning pad (SWMU 10) was formerly used to clean heat exchanger tubes with high-pressure water jets. The unit is located immediately north of Avenue C access from the Combo Unit and the western border is approximately 160 feet east of Seventh Street. The pad is surrounded by a 2-foot earth berm to contain run-off, that drains to the Refinery sewer inlets and then to the on-site WWTP.

In accordance with the Statement of Basis, FDRTC, and CMI design, the corrective action for SWMU 10 consists of the demolition and removal of the concrete pad and removal of the soil berms. Concrete will be sized and placed in the CAMU West. In addition, the top 2 feet of soil will be removed to the lateral limits of the excavation.

The lateral limits of excavation include areas extending approximately 75 feet north of the pad, approximately 40 feet west of the pad, approximately 75 feet east of the pad, and south to the edge of Avenue C including a storm water ditch. However, there is a utility corridor for the Refinery high voltage electric service and a 48-inch OWS line that is located south of the pad and is approximately 35-feet wide. Safety precautions from potential ground settlement issues will preclude soil removal in this corridor. The total area to be excavated is approximately 23,950 ft^2.

Soil samples at SWMU 10 were obtained to verify the limits of excavation not previously determined during RFI activities. The results of the preconstruction verification sampling event conducted in November 2006 were used to determine the lateral limits of excavation north of SWMU 10. These results are presented in the final PMP. As described in the PMP, four verification samples will be collected from the excavation floor to complete vertical delineation at this unit. All verification samples will be compared to the SWMU 10 SSLs to confirm the limits of excavation. Excavated soil will be managed in CAMU West. Backfill will be placed into the excavated areas to the original grade.

4.2.9 AOC 1

The North Coker Ditch, designated as AOC 1, is an unlined ditch designed to collect storm water runoff from operations at the Coker Unit and divert the runoff into the OWS system. AOC 1 is located in the northwest part of the Refinery, immediately south of Avenue C, between Ninth Street and Seventh Street. The ditch receives storm drainage from the street and from the north side of the coker operations. Over the history of operations at the site, coke fines, oils generated in the coking process, and oily water overflow from the former blow-down containment tank have collected in the ditch.

According to the Statement of Basis, FDRTC, and CMI design, corrective action for AOC 1 consists of removal of the top 1 foot of soil from the ditch as practicable, given the physical constraints of utilities, process piping, and other structures. The ditch will then be covered with a low permeability liner to minimize infiltration and reduce direct contact by construction workers. Where NAPL is encountered during the excavation, remedial actions will include the removal of petroleum-saturated soil following the procedures outlined on Figure 6. The excavated materials will be managed in the CAMU West impoundment.

The proposed excavation for AOC 1 encompasses an irregular area 490 feet long by 70 feet wide at its greatest extent, including approximately 27,200 ft^2, or 0.624 acres. The

lateral extent and depth of the proposed excavation are limited by engineering controls, administrative boundaries, and planned dimensions of the concrete liner. In accordance with the PMP, two documentation samples will be collected from the excavation floor in lieu of verification samples since the excavation limits are defined and a low permeability liner will be installed in the ditch. Documentation samples will be compared to the AOC 1 RBRGs for the protection of future construction workers. If the results of the documentation samples exceed the clean-up levels for this SWMU then potential groundwater remedies will be evaluated, if required.

4.2.10 SWMU 6

An additional risk assessment evaluation and an additional investigation have been conducted at SWMU 6 to further characterize the risks and the potential impacts to soil and groundwater within SWMU 6.

The additional risk assessment evaluation was conducted to further characterize and define soil and groundwater impacts at the unit and based on these data, evaluate the risks to human health from these impacts, as well as potential ecological risk to Bull Creek Pond.

The additional investigation data was used to:

- Determine whether the source of down gradient and downstream soil and groundwater impacts are from SWMU 6 or from impacted groundwater flowing from adjacent SWMUs;
- Assess whether impacts present in the unsaturated zone beneath SWMU 6 may present a risk to industrial or construction workers;
- Evaluate ecological and human health risks associated with soil and groundwater impacts in SWMU 6 and down gradient surface water body, BCP;

The additional risk assessment evaluation is described in the Human Health Risk Assessment for SWMU 6 (RETEC, November 2007). The additional investigation is described in the Solid Waste Management Unit 6 Investigation Report (RETEC, December 2007). The results of this work identified areas and depths of excavation (Figure 4-3, RETEC, December 2007). The USEPA commented on this report and requested additional investigation in an area where soil analytical results from a soil boring SB6-4 indicated elevated levels of arsenic. Based on the results of the investigation, the volume of material to be excavated and placed in the CAMU West impoundment is estimated at 6,000 cubic yards (Table 2).

4.2.11 Maintenance Activities—SWMUs 11 and 12

SWMU 11 (Former Storage Container Area) and SWMU 12 (Former Drum Storage Area) are located north of Avenue F, between Fourth and Fifth Streets. SWMU 11 is approximately 30 feet by 40 feet and was used for short-term storage of covered and lined containers of hazardous materials (toxicity characteristics), such as sand blast waste and catalysts. SWMU 12 is approximately 4 feet by 300 feet and was used to store drums containing both hazardous and non-hazardous materials pending disposal.

Interim measures were conducted at SWMUs 11 and 12 in August and September 1998 to be consistent with a final remedy. Interim measures included leveling the areas by grading and removing existing soil as necessary to prepare the areas for placement of an asphalt cap. A sub-base layer of crusher-run soil was then installed, an asphalt tack coat applied as a primer and adhesive, and a finish course of asphalt applied. The asphalt was allowed to cure for 3 weeks before a seal coat was applied (ThermoRetec, 1998).

Maintenance activities for SWMUs 11 and 12 include routine inspection of the asphalt surface over each SWMU. If cracking or disturbance of the asphalt cap is observed, maintenance activities are to be initiated to repair the cracks or broken asphalt. In order to maintain the permeability integrity of the asphalt cap, a sealant should be applied every 3 to 5 years. Quarterly inspection and maintenance activities will continue as part of the final remedy for SWMU 11 and 12 in accordance with the Interim Measures Construction Report (ThermoRetec, 1998). The inspection and maintenance results will be reported to USEPA in the progress reports.

4.3 Groundwater Remediation Approach

This Section presents an outline of the approach that will be taken to implement the three phases of the groundwater cleanup strategy to comply with the cleanup standards for the Refinery. Each phase of the groundwater remedy that is presented follows the outline contained in the FDRTC and the Statement of Basis. The work that has been completed or that is ongoing is presented, followed by an overview of work that is proposed.

Although the Corrective Measures Study prepared in 2002 evaluated a wide range of active remediation options, the multiple phases of the groundwater investigation and the routine monitoring programs demonstrate that no offsite releases have occurred. The Statement of Basis, as well as more recent project documents, support that groundwater impacts are only potentially related to seven of the SWMUs, with limited areas and constituents. The work that is proposed in the following sections will evaluate the extent of monitored natural attenuation (MNA) at the site.

4.3.1 Groundwater Remedy Phase One – Source Control and Monitoring

The first phase of the groundwater remedy consists of completing the delineation and removal of contaminated soils and recoverable free product (i.e. NAPL), removing free product to the extent practicable, in a manner consistent with the VDEQ AST Program and EPA's Corrective Action program, and continuing the ongoing compliance monitoring programs currently in place.

Work Performed to Date

Western established ICs prior to initiating the first phase of construction to prevent human or environmental exposure to COCs. The ICs at the Refinery restrict residential use of the property and use of groundwater until media cleanup standards (MCSs as defined in Table 2b the Statement of Basis) are met.

The Refinery has a vast monitoring well network presently in place that is utilized in the current NAPL measurement and removal program. NAPL removal activities are ongoing as required by the VDEQ-administered AST and Solid Waste Programs and the USEPA Corrective Action program. Active product removal is conducted monthly at several monitoring wells using manual bailing, passive skimmer, and periodic vacuum-enhanced fluid recovery (VEFR) techniques. NAPL removal outside of the AST Program is governed by the CAMU Groundwater Monitoring Plan (GWMP) and consists of monthly removal activities.

Compliance monitoring will continue at the CAMU in accordance with the regulating agency requirements. The IWL program and AST program monitoring will continue for compliance with existing VDEQ requirements. Currently, annual reports for each program in addition to quarterly summaries of product removal activities are prepared for the Tidewater Region of the VDEQ. Quarterly product removal data for the AST program are also included in the CMI Quarterly Progress Reports. Annual CAMU Groundwater Assessment Reports are prepared and submitted to the USEPA.

Work Proposed

Subtask 1a – Soil Excavation

NAPL-saturated soil is a potential source of groundwater contamination that is being removed via excavation to the extent practicable. The SWMU excavation and CAMU construction activities are underway as part of USEPA's Corrective Action Program.

Subtask 1b – Implement Below-Grade OWS CI&R Work Plan

An OWS inspection was conducted in 2001 in the vicinity of the 600-Series aboveground storage tank farm to investigate whether the OWS could be a source of COCs present in groundwater. The results of the inspection and cleaning indicated that the OWS appeared to be intact, but infiltrating groundwater was observed at the joints.

Because the OWS in this area lies below the water table, it likely serves as a groundwater sink rather than a source of contamination. The below grade OWS will be cleaned and inspected in other areas of the Refinery where groundwater plumes and/or the occurrence of NAPL co-exist with the OWS to determine whether or not the OWS is a source of the existing groundwater impacts. This work will be completed as described in the Oily Water Sewer Cleaning, Inspection, and Repair Work Plan (CI&R) (ENSR, 2008), with appropriate updates, and Section 5.2.2 of this work plan.

Subtask 1c – Continue NAPL Removal Activities

The site wide NAPL measuring and removal program will continue. Western will review, and revise as necessary, the current program as wells are abandoned as part of the construction activities.

Subtask 1d – Evaluate Additional ICs

In the future, ICs will be implemented to prevent disturbance of the caps on the SWMUs and CAMU, and use of the site that would interfere with the implementation, integrity, or protectiveness of the engineering portion of the remedy.

A deed restriction against the use of groundwater at the site is an IC that has been implemented as part of the groundwater remedy. This restriction will remain in place until Phase Three of the groundwater remedy is completed.

4.3.2 Groundwater Remedy Phase Two – Groundwater Characterization

The second phase of the groundwater remedy consists of evaluating groundwater plumes, evaluating mechanisms controlling plume migration, maintaining the EIs, and refining the existing compliance monitoring programs. This section gives an overview of work that has been completed to date and work that is being proposed in the future to implement the second phase of the groundwater remedy.

Work Performed to Date

In 2007, the Refinery achieved a positive EI determination indicating human exposures were under control and migration of contaminated groundwater was under control. This EI determination was achieved without hydraulic control suggesting that natural attenuation processes have been effective in controlling plume migration.

NAPL and dissolved-phase plumes have been identified and investigated during the

- Phase I and II RFI (RETEC, 1997 and 2001);
- Phase II RFI Addendum (RETEC, 2001);
- Supplemental Investigation (RETEC, 2007);
- EI (USEPA, 2007);

Work Proposed

Subtask 2a – Develop Hydrogeologic and Geochemical Characterization Work Plan

A monitoring plan will be developed to document hydrogeologic and geochemical conditions at the site and illustrate how those conditions control contaminant migration and attenuation. This plan will be coordinated with the routine compliance monitoring programs currently underway. A hydrogeologic and geochemical characterization will be conducted to document groundwater flow conditions and major processes controlling contaminant transport and attenuation. Results of this work will be used to:

- Estimate the assimilative capacity of the aquifer at the site for the primary COCs;
- Document portions of the site where natural attenuation processes are sufficient to limit offsite migration of contaminants; and
- Estimate and monitor the rate that natural attenuation is occurring.

The details of hydrogeologic and geochemical characterization will be developed in this monitoring plan. The following documents will be important references in developing this plan.

- *Use of Monitored Natural Attenuation at Superfund*, RCRA, Corrective Action, and Underground Storage Tank Sites, (1999). U.S. EPA. OSWER Directive 9200.4-17P. Washington, D.C. April, 21, 1999.
- *Technical Protocol for Implementing Intrinsic Remediation with Long-Term Monitoring for Natural Attenuation of Fuel Contamination Dissolved in Groundwater*, (1995). Wiedemeier, T.H., J.T. Wilson, D.H. Kampbell, R.N. Miller, and J.E. Hansen. U.S. Air Force Center for Environmental Excellence, Technology Transfer Division, Brooks Air Force Base, San Antonio, Texas.
- *Monitored Natural Attenuation of MTBE as a Risk Management Option at Leaking Underground Storage Tank Sites*, (2005). Wilson, J. T., P. M. Kaiser and C. Adair. USEPA, EPA/600/R-04/1790.
- *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water, Volume 1 - Technical Basis for Assessment* (2007). Ford, R. G., R. T. Wilkin, and R. W. Puls, USEPA, EPA/600/R-07/139.

- *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water, Volume 2 - Assessment for Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium* (2007). Ford, R. G., R. T. Wilkin, and R. W. Puls, USEPA, EPA/600/R-07/140.

Both qualitative and quantitative assessments of COC concentrations and MNA processes will be presented in CMI Progress Reports.

Subtask 2b – Develop a Preliminary MNA Program Evaluation
After completion of the hydrogeologic and geochemical characterization, a Preliminary MNA Program Evaluation will be submitted to document the extent of MNA at the site.

Subtask 2c – Establish Points of Compliance (POCs)
Points of compliance (POCs) will be established down gradient of the principal contaminant plumes. The exact location of the POCs will be determined as part of the hydrogeologic and geochemical characterization. The POCs will be used to verify migration control and in Subtask 3b.

Subtask 2d – Refine Compliance Monitoring
Based on data collected during the proposed Phase Two activities identified above, the existing compliance monitoring programs will be refined and revised.

4.3.3 Groundwater Remedy Phase Three – Groundwater Restoration

Phase Three includes the evaluation and application of long-term groundwater remedies.

Work Performed to Date

Long-term performance monitoring associated with the CAMU has been established in the CAMU Groundwater Monitoring Work Plan revised October 2008. The plan defines the criteria used to evaluate the performance of the overall CAMU. The plan also describes the methods, locations, frequency, and quality control procedures involved in data collection and describe how the data are compiled, analyzed, and evaluated.

Work Proposed

Subtask 3a – Reassess Groundwater Conditions

Once soil source removal activities are complete and groundwater conditions have stabilized, conditions will be reassessed. The positive EI determination suggests that monitored natural attenuation may be effective in controlling plume migration and ultimately restoring groundwater quality. Procedures for conducting this assessment, potentially applicable remedies, and procedures for remedy selection will be documented in a work plan.

Subtask 3b – Evaluate Remedial Options

Remedial options will be evaluated for the site. The remediation goal for the site is to meet the groundwater clean-up standards defined in Table 2b of the Statement of Basis. MNA is expected to be a primary component of the groundwater remedy.

Subtask 3c – Performance Monitoring of the Groundwater Remedy

A monitoring plan will be developed to document the performance of the groundwater remedy. This will include monitoring to demonstrate the long-term effectiveness of MNA or other potential remedies. The plan will define the criteria used to evaluate the performance of the remedy, such as MNA. The plan will also describe the methods, locations, frequency, and quality control procedures involved in data collection and will describe how the data will be compiled, analyzed, and evaluated.

4.4 Sediment and Surface Water Remediation

This section presents the approach for implementing sediment and surface water remediation at BCP as detailed in the Statement of Basis, FDRTC, and CMI design. The below sections are a brief overview of surface water and sediment conditions and a summary of the planned corrective actions for BCP. Sediment removal activities will be

performed as part of SWMU remediation and CAMU West construction activities (Table 1). Design elements of sediment remediation such as waste and material handling requirements, traffic control, erosion control, etc. will be finalized in the Phase II CMI Design Report.

BCP is located east of the Refinery fence line adjacent to SWMU 6. The pond has approximately 3.25 acres of open water surface and currently receives freshwater inflow through two storm water drainage ditches at the pond's southern end. Formerly, the pond also received storm water from an outfall located within SWMU 6, but this outfall was blocked to prevent runoff discharge from the SWMU 6 to the pond. During high surface water conditions, the pond drains north to a tidal salt marsh via a man-made mosquito ditch maintained by the Mosquito Control District. Conversely, the pond may receive marine inflow during extreme high tide conditions or storm events via the mosquito ditch. Sediment impacts have been detected in the west side of BCP, possibly due to constituents in surface water runoff and/or via groundwater transport from SWMU 6.

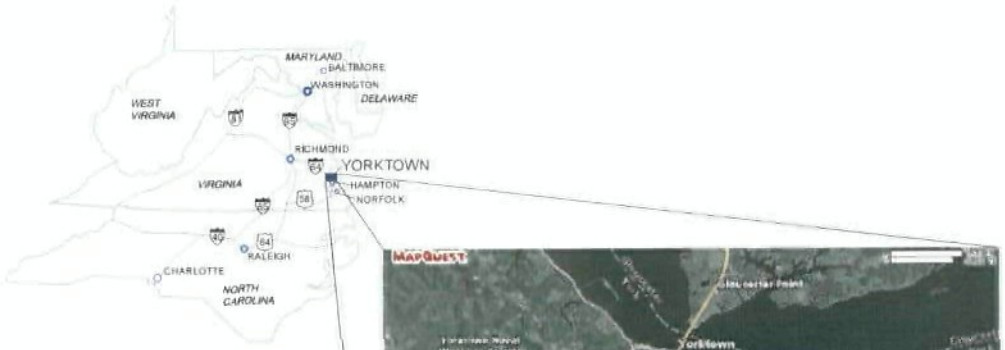
In accordance with the Statement of Basis, FDRTC, and CMI design, the corrective action for the BCP area consists of excavating surface sediment (1 to 1.5 feet bgs) in the proposed remedial footprint. The total area of the proposed remedial footprint is approximately 18,500 ft^2, or 0.42 acres. As provided in the PMP, five verification samples will be collected from the excavation floor. Since the excavation is only 1 to 1.5 feet deep, sediment sidewall samples will not be collected. All verification samples will be analyzed for the BCP COCs (acetone and PAHs) and compared to the sediment RBRGs.

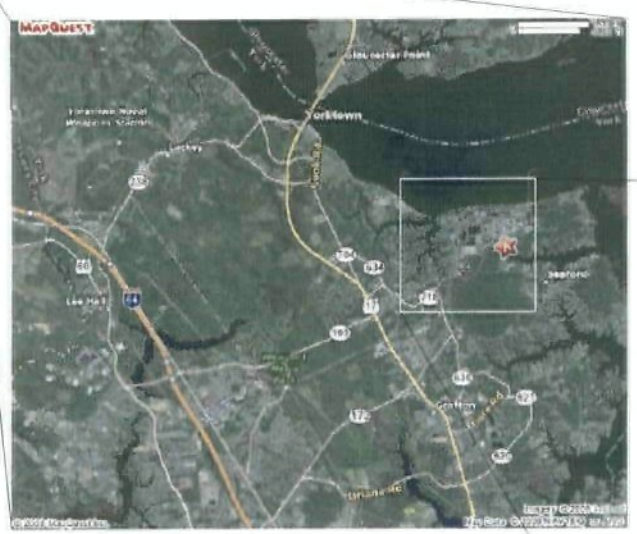
In order to ensure that corrective action is not required for additional BCP sediments, a preconstruction sampling event was performed at seven locations where elevated reporting limits were documented for previous samples. These samples were submitted for analysis of acetone and PAHs for comparison to the BCP sediment RBRGs (Table 2A of the Statement of Basis). Results of this sampling event were used to determine if additional areas of sediment impacts require corrective action and are presented in the final PMP. Sediment removed from the BCP area will be managed in the CAMU and habitat restoration performed for this area of BCP.

4.5 Storm Water Management

During SWMU/CAMU West construction, all contact storm water will be pumped to the above-ground sewer box SB58 for treatment in the Refinery WWTP. The Refinery WWTP will treat up to 300 gallons per minute of contact water during construction with any excess volume stored in Tanks 23 and 24 prior to treatment (total storage capacity of 12.6 million gallons). A preliminary and temporary contact storm water retention pond is illustrated on Figure 5.

Non-contact storm water during construction and post-construction will be handled in the existing storm water conveyance ditches and storage basins. The Stormwater Modeling Report (RETEC, 2004) demonstrated that the existing Refinery storm water system had adequate capacity for non-contact storm water during construction and for post-CAMU construction storm water.





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Opal Group, Inc. 25 S. Wilcox Street Castle Rock, CO 80104 tel 303-681-6067 - fax 303-681-9056 - www.opalgroupinc.com	PREPARED FOR WESTERN REFINING YORKTOWN, INC. YORKTOWN, VIRGINIA	SITE LOCATION MAPS	FIGURE NO. 1
		REVISED CMI WORK PLAN	SHEET NO.

BASE MAP PROVIDED BY: WESTERN REFINING YORKTOWN, INC. VERIFY ACCURACY PRIOR TO USE.

NO	DRAWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

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Castle Rock, CO 80104
tel 303-681-6067 - fax 303-681-6068 - www.opalgroupinc.com

PROJ. NO. 06-104 | DATE: 30 SEPTEMBER 2006 | DRAWN BY: JA

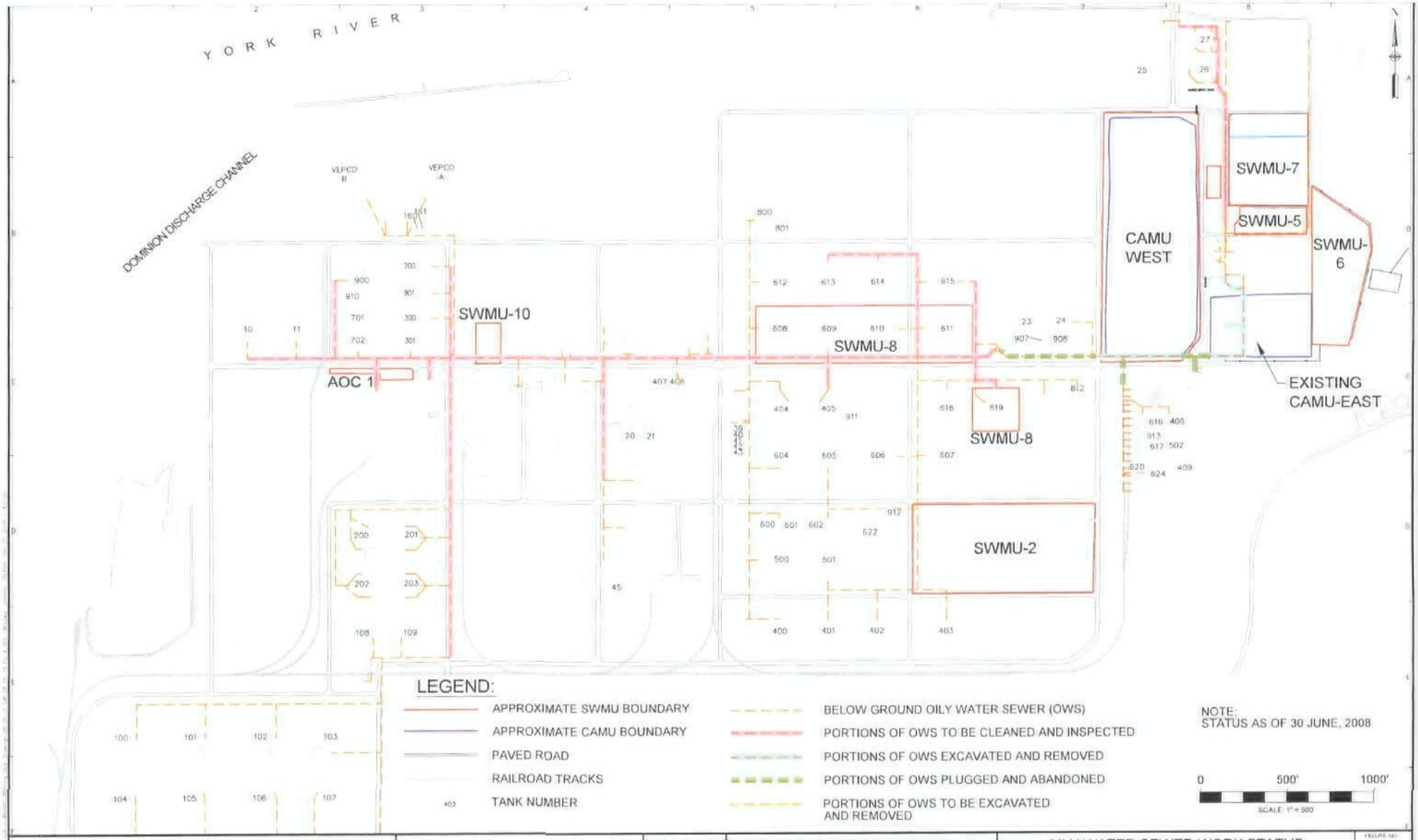
PREPARED FOR:
WESTERN REFINING YORKTOWN, INC.
YORKTOWN, VIRGINIA

PHASE II SWMU AND CAMU WEST LOCATIONS

REVISED CMI WORK PLAN

FIGURE NO. 3

SHEET NO.



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tel 303-681-9067 - fax 303-681-9068 - www.opalgroupinc.com

PROJ. NO. [redacted] | DATE: 30 SEPTEMBER 2008 | DRAWN BY: JA

PREPARED FOR:
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YORKTOWN, VIRGINIA

OILY WATER SEWER WORK STATUS

REVISED CMI WORK PLAN

FIGURE NO. 4

SHEET NO.

Western Refining Yorktown Inc.
DMR Data

ermit No	VA0003018	Facility Name	Western Refining Yorktown Incorporat	Outfall No	001

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
	NITROGEN, TOTAL (AS N) (CALENDAR YEAR)	Annual	NULL	215522	NULL	NULL	NULL	01-JAN-2006	31-DEC-2006
	PHOSPHORUS, TOTAL (AS P) (CALENDAR YEAR)	Annual	NULL	23038	NULL	NULL	NULL	01-JAN-2006	31-DEC-2006
	NITROGEN, TOTAL (AS N) (MONTHLY LOAD)	Month	NULL	11882	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.74	1.46	01-NOV-2006	30-NOV-2006
	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.03	0.10	01-NOV-2006	30-NOV-2006
	NITRITE+NITRATE-N,TOTAL	Month	NULL	NULL	NULL	0.24	0.96	01-NOV-2006	30-NOV-2006
	ORTHOPHOSPHATE (AS P)	Month	NULL	NULL	NULL	0.15	0.30	01-NOV-2006	30-NOV-2006
	TKN (N-KJEL)	Month	NULL	NULL	NULL	<QL	<QL	01-NOV-2006	30-NOV-2006
	PHOSPHORUS, TOTAL (AS P) (MONTHLY LOAD)	Month	NULL	1337	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
0	FLOW	Month	68.9	69.2	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
1	PH	Month	NULL	NULL	7.7	NULL	8.0	01-NOV-2006	30-NOV-2006
2	PH	Month	NULL	NULL	7.7	NULL	8.1	01-DEC-2006	31-DEC-2006
3	FLOW	Month	50.6	68.7	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
4	PHOSPHORUS, TOTAL (AS P) (MONTHLY LOAD)	Month	NULL	2515	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
5	TKN (N-KJEL)	Month	NULL	NULL	NULL	0.15	0.60	01-DEC-2006	31-DEC-2006
6	ORTHOPHOSPHATE (AS P)	Month	NULL	NULL	NULL	<QL	<QL	01-DEC-2006	31-DEC-2006
7	NITRITE+NITRATE-N,TOTAL	Month	NULL	NULL	NULL	0.61	1.24	01-DEC-2006	31-DEC-2006
8	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.12	0.30	01-DEC-2006	31-DEC-2006
9	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.76	1.24	01-DEC-2006	31-DEC-2006
0	NITROGEN, TOTAL (AS N) (MONTHLY LOAD)	Month	NULL	14615	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
1	PH	Month	NULL	NULL	7.6	NULL	8.0	01-JAN-2007	31-JAN-2007
2	FLOW	Month	32.5	48.1	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007

ermit No	VA0003018	Facility Name	Western Refining Yorktown Incorporated	Outfall No	001

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
3	PHOSPHORUS, TOTAL (AS P) (MONTHLY LOAD)	Month	NULL	1458	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
4	TKN (N-KJEL)	Month	NULL	NULL	NULL	0.40	2.39	01-JAN-2007	31-JAN-2007
5	ORTHOPHOSPHATE (AS P)	Month	NULL	NULL	NULL	0.23	0.41	01-JAN-2007	31-JAN-2007
6	NITRITE+NITRATE-N,TOTAL	Month	NULL	NULL	NULL	1.53	9.19	01-JAN-2007	31-JAN-2007
7	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.36	1.50	01-JAN-2007	31-JAN-2007
8	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.93	11.58	01-JAN-2007	31-JAN-2007
9	NITROGEN, TOTAL (AS N) (MONTHLY LOAD)	Month	NULL	4855	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
0	PH	Month	NULL	NULL	7.4	NULL	8.2	01-FEB-2007	28-FEB-2007
1	FLOW	Month	32.4	43.9	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
2	PHOSPHORUS, TOTAL (AS P) (MONTHLY LOAD)	Month	NULL	2020	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
3	TKN (N-KJEL)	Month	NULL	NULL	NULL	1.28	5.10	01-FEB-2007	28-FEB-2007
4	ORTHOPHOSPHATE (AS P)	Month	NULL	NULL	NULL	0.21	0.42	01-FEB-2007	28-FEB-2007
5	NITRITE+NITRATE-N,TOTAL	Month	NULL	NULL	NULL	2.51	8.29	01-FEB-2007	28-FEB-2007
6	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	4.55	18.0	01-FEB-2007	28-FEB-2007
7	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	3.79	13.39	01-FEB-2007	28-FEB-2007
8	NITROGEN, TOTAL (AS N) (MONTHLY LOAD)	Month	NULL	8844	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
9	PH	Month	NULL	NULL	8.1	NULL	8.3	01-MAR-2007	31-MAR-2007
0	FLOW	Month	45.0	46.1	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
1	PHOSPHORUS, TOTAL (AS P) (MONTHLY LOAD)	Month	NULL	3378	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
2	TKN (N-KJEL)	Month	NULL	NULL	NULL	0.17	0.67	01-MAR-2007	31-MAR-2007
3	ORTHOPHOSPHATE (AS P)	Month	NULL	NULL	NULL	<QL	<QL	01-MAR-2007	31-MAR-2007
4	NITRITE+NITRATE-N,TOTAL	Month	NULL	NULL	NULL	0.31	1.25	01-MAR-2007	31-MAR-2007
5	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.30	0.61	01-MAR-2007	31-MAR-2007
6	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.48	1.25	01-MAR-2007	31-MAR-2007
7	NITROGEN, TOTAL (AS N) (MONTHLY LOAD)	Month	NULL	10918	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
8	PH	Month	NULL	NULL	7.7	NULL	8.1	01-APR-2007	30-APR-2007

ermit No.	VA0003018	Facility Name	Western Refining Yorktown Incorporated	Outfall No	001

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
9	FLOW	Month	50.9	69.2	NULL	NULL	NULL	01-APR-2007	30-APR-2007
0	PHOSPHORUS, TOTAL (AS P) (MONTHLY LOAD)	NULL	NULL	3073	NULL	NULL	NULL	01-APR-2007	30-APR-2007
1	TKN (N-KJEL)	NULL	NULL	NULL	NULL	0.31	0.67	01-APR-2007	30-APR-2007
2	NITROGEN, TOTAL (AS N) (MONTHLY LOAD)	NULL	NULL	12002	NULL	NULL	NULL	01-APR-2007	30-APR-2007
3	NITROGEN, TOTAL (AS N)	NULL	NULL	NULL	NULL	0.60	0.67	01-APR-2007	30-APR-2007
4	NITRITE+NITRATE-N,TOTAL	NULL	NULL	NULL	NULL	0.29	0.60	01-APR-2007	30-APR-2007
5	ORTHOPHOSPHATE (AS P)	NULL	NULL	NULL	NULL	0.07	0.14	01-APR-2007	30-APR-2007
6	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.37	1.20	01-APR-2007	30-APR-2007
7	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.13	NULL	01-MAY-2007	31-MAY-2007
8	FLOW	Month	72.3	74.2	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
9	PH	Month	NULL	NULL	7.5	NULL	7.9	01-MAY-2007	31-MAY-2007
0	FLOW	Month	57.9	75.3	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
1	PH	Month	NULL	NULL	7.8	NULL	8.2	01-JUN-2007	30-JUN-2007
2	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.10	NULL	01-JUN-2007	30-JUN-2007
3	PH	Month	NULL	NULL	7.7	NULL	8.2	01-JUL-2007	31-JUL-2007
4	FLOW	Month	74.5	75.3	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
5	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.10	NULL	01-JUL-2007	31-JUL-2007
6	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.11	NULL	01-AUG-2007	31-AUG-2007
7	FLOW	Month	73.4	75.3	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
8	PH	Month	NULL	NULL	7.2	NULL	8.0	01-AUG-2007	31-AUG-2007
9	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.09	NULL	01-SEP-2007	30-SEP-2007
0	FLOW	Month	70.1	75.1	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
1	PH	Month	NULL	NULL	7.8	NULL	8.3	01-SEP-2007	30-SEP-2007
2	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.15	NULL	01-OCT-2007	31-OCT-2007
3	FLOW	Month	67.9	75.2	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
4	PH	Month	NULL	NULL	7.3	NULL	8.4	01-OCT-2007	31-OCT-2007

ermit No	VA0003018	Facility Name	Western Refining Yorktown Incorporated	Outfall No	001

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
5	PH	Month	NULL	NULL	7.6	NULL	8.0	01-NOV-2007	30-NOV-2007
6	FLOW	Month	40.0	48.4	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
7	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.46	NULL	01-NOV-2007	30-NOV-2007
8	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.06	NULL	01-DEC-2007	31-DEC-2007
9	FLOW	Month	48.1	48.7	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
0	PH	Month	NULL	NULL	7.5	NULL	8.1	01-DEC-2007	31-DEC-2007
1	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.16	NULL	01-JAN-2008	31-JAN-2008
2	PH	Month	NULL	NULL	7.9	NULL	8.1	01-JAN-2008	31-JAN-2008
3	FLOW	Month	46.8	48.6	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
4	FLOW	Month	45.3	47.4	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
5	PH	Month	NULL	NULL	6.2	NULL	7.6	01-FEB-2008	29-FEB-2008
6	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.06	NULL	01-FEB-2008	29-FEB-2008
7	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.92	NULL	01-MAR-2008	31-MAR-2008
8	PH	Month	NULL	NULL	7.8	NULL	7.9	01-MAR-2008	31-MAR-2008
9	FLOW	Month	41.8	48.4	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
0	PH	Month	NULL	NULL	7.6	NULL	7.8	01-APR-2008	30-APR-2008
1	FLOW	Month	53.8	74.1	NULL	NULL	NULL	01-APR-2008	30-APR-2008
2	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.44	NULL	01-APR-2008	30-APR-2008
3	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.12	NULL	01-MAY-2008	31-MAY-2008
4	FLOW	Month	68.8	69.6	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
5	PH	Month	NULL	NULL	7.8	NULL	7.9	01-MAY-2008	31-MAY-2008
6	PH	Month	NULL	NULL	7.2	NULL	7.8	01-JUN-2008	30-JUN-2008
7	FLOW	Month	69.2	73.0	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
8	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.06	NULL	01-JUN-2008	30-JUN-2008
9	PH	Month	NULL	NULL	7.5	NULL	8.0	01-JUL-2008	31-JUL-2008
00	FLOW	Month	71.1	76.2	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
01	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.08	NULL	01-JUL-2008	31-JUL-2008
02	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.15	NULL	01-AUG-2008	31-AUG-2008
03	FLOW	Month	66.3	72.0	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
04	PH	Month	NULL	NULL	7.6	NULL	8.0	01-AUG-2008	31-AUG-2008
05	PH	Month	NULL	NULL	7.5	NULL	8.0	01-SEP-2008	30-SEP-2008
06	FLOW	Month	69.6	74.1	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
07	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.13	NULL	01-SEP-2008	30-SEP-2008
08	PH	Month	NULL	NULL	7.3	NULL	7.9	01-OCT-2008	31-OCT-2008
09	FLOW	Month	69.4	70.7	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
10	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.08	NULL	01-OCT-2008	31-OCT-2008
11	PH	Month	NULL	NULL	7.7	NULL	8.1	01-NOV-2008	30-NOV-2008
12	FLOW	Month	65.5	69.4	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
13	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.06	NULL	01-NOV-2008	30-NOV-2008
14	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.06	NULL	01-DEC-2008	31-DEC-2008
15	FLOW	Month	45.5	45.8	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
16	PH	Month	NULL	NULL	7.8	NULL	8.4	01-DEC-2008	31-DEC-2008
17	PH	Month	NULL	NULL	7.1	NULL	8.0	01-JAN-2009	31-JAN-2009
18	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.13	NULL	01-JAN-2009	31-JAN-2009
19	FLOW	Month	45.5	47.8	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
20	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.09	NULL	01-FEB-2009	28-FEB-2009
21	PH	Month	NULL	NULL	7.4	NULL	7.9	01-FEB-2009	28-FEB-2009
22	FLOW	Month	45.5	47.8	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
23	FLOW	Month	44.4	47.7	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
24	PH	Month	NULL	NULL	7.5	NULL	7.9	01-MAR-2009	31-MAR-2009
25	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.07	NULL	01-MAR-2009	31-MAR-2009
26	FLOW	Month	44.1	47.5	NULL	NULL	NULL	01-APR-2009	30-APR-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
27	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.24	NULL	01-APR-2009	30-APR-2009
28	PH	Month	NULL	NULL	7.1	NULL	7.8	01-APR-2009	30-APR-2009
29	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.08	NULL	01-MAY-2009	31-MAY-2009
30	PH	Month	NULL	NULL	7.6	NULL	7.8	01-MAY-2009	31-MAY-2009
31	FLOW	Month	69.7	73.1	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
32	PH	Month	NULL	NULL	7.5	NULL	7.9	01-JUN-2009	30-JUN-2009
33	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.39	NULL	01-JUN-2009	30-JUN-2009
34	FLOW	Month	69.9	71.1	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
35	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.40	NULL	01-JUL-2009	31-JUL-2009
36	FLOW	Month	70.9	73.2	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
37	PH	Month	NULL	NULL	7.3	NULL	8.0	01-JUL-2009	31-JUL-2009
38	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.11	NULL	01-AUG-2009	31-AUG-2009
39	PH	Month	NULL	NULL	7.5	NULL	8.0	01-AUG-2009	31-AUG-2009
40	FLOW	Month	71.4	72.5	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
41	PH	Month	NULL	NULL	7.8	NULL	8.2	01-SEP-2009	30-SEP-2009
42	FLOW	Month	70.2	71.6	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
43	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.12	NULL	01-SEP-2009	30-SEP-2009
44	FLOW	Month	69.8	71.4	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
45	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.12	NULL	01-OCT-2009	31-OCT-2009
46	PH	Month	NULL	NULL	7.8	NULL	8.2	01-OCT-2009	31-OCT-2009
47	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	<QL	NULL	01-NOV-2009	30-NOV-2009
48	FLOW	Month	70.1	72.0	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
49	PH	Month	NULL	NULL	6.9	NULL	7.9	01-NOV-2009	30-NOV-2009
50	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.04	NULL	01-DEC-2009	31-DEC-2009
51	PH	Month	NULL	NULL	7.1	NULL	7.5	01-DEC-2009	31-DEC-2009
52	FLOW	Month	69.5	70.8	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
	PH	Month	NULL	NULL	7.3	NULL	8.1	01-NOV-2006	30-NOV-2006
	TSS	Month	166.5	277.8	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	OIL & GREASE	Month	19.0	39.9	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	CARBON, TOTAL ORGANIC	Month	282.9	350.0	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	SULFIDE, TOTAL (AS S)	Month	0.06	0.09	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	AMMONIA, AS N	Month	17.05	27.84	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.020	<0.0200	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	PHENOLS	Month	0.12	0.33	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	CHROMIUM, TOTAL (AS CR)	Month	<0.061	<0.061	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
0	BOD5	Month	55.8	164.3	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
1	FLOW	Month	1.41	1.74	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
2	FLOW	Month	0.98	1.46	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
3	BOD5	Month	66.0	271.8	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
4	CHROMIUM, TOTAL (AS CR)	Month	<0.006	<0.006	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
5	PHENOLS	Month	0.14	0.24	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
6	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.042	<0.042	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
7	AMMONIA, AS N	Month	19.41	66.97	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
8	SULFIDE, TOTAL (AS S)	Month	0.07	0.12	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
9	CARBON, TOTAL ORGANIC	Month	239.2	302.6	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
0	OIL & GREASE	Month	8.8	12.6	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
1	TSS	Month	96.3	150.0	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
2	PH	Month	NULL	NULL	7.6	NULL	7.8	01-DEC-2006	31-DEC-2006
3	BOD5	Month	41.4	96.0	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
4	CHROMIUM, TOTAL (AS CR)	Month	<0.058	<0.058	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
5	PHENOLS	Month	0.21	0.31	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
6	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.059	<0.059	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
7	AMMONIA, AS N	Month	5.66	12.69	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
8	SULFIDE, TOTAL (AS S)	Month	0.12	0.15	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
9	CARBON, TOTAL ORGANIC	Month	232.4	359.7	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
0	OIL & GREASE	Month	5.6	8.3	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
1	TSS	Month	186.9	369.6	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
2	PH	Month	NULL	NULL	7.3	NULL	7.7	01-JAN-2007	31-JAN-2007
3	FLOW	Month	1.18	1.44	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
4	BOD5	Month	45.2	75.9	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
5	CHROMIUM, TOTAL (AS CR)	Month	<0.032	<0.032	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
6	PHENOLS	Month	0.17	0.29	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
7	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.032	<0.032	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
8	AMMONIA, AS N	Month	6.11	7.48	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
9	SULFIDE, TOTAL (AS S)	Month	0.27	0.60	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
0	CARBON, TOTAL ORGANIC	Month	320.2	425.5	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
1	OIL & GREASE	Month	6.4	13.4	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
2	TSS	Month	327.3	991.4	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
3	PH	Month	NULL	NULL	7.0	NULL	7.8	01-FEB-2007	28-FEB-2007
4	FLOW	Month	1.18	1.52	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
5	PHENOLS	Month	0.49	1.59	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
6	SULFIDE, TOTAL (AS S)	Month	0.47	0.86	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
7	CARBON, TOTAL ORGANIC	Month	287.8	391.9	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
8	OIL & GREASE	Month	3.3	6.7	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
9	TSS	Month	103.6	137.9	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
0	PH	Month	NULL	NULL	7.6	NULL	8.1	01-MAR-2007	31-MAR-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
1	FLOW	Month	1.13	1.31	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
2	BOD5	Month	40.8	82.0	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
3	CHROMIUM, TOTAL (AS CR)	Month	<0.018	<0.018	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
4	AMMONIA, AS N	Month	38.3	94.3	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
5	CHROMIUM, HEXAVALENT (AS CR)	Month	0.026	0.026	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
6	TSS	Month	176.5	328.5	NULL	NULL	NULL	01-APR-2007	30-APR-2007
7	CHROMIUM, TOTAL (AS CR)	Month	0.198	0.358	NULL	NULL	NULL	01-APR-2007	30-APR-2007
8	PH	Month	NULL	NULL	7.0	NULL	8.4	01-APR-2007	30-APR-2007
9	OIL & GREASE	Month	10.7	31.0	NULL	NULL	NULL	01-APR-2007	30-APR-2007
10	AMMONIA, AS N	Month	7.70	9.94	NULL	NULL	NULL	01-APR-2007	30-APR-2007
11	CARBON, TOTAL ORGANIC	Month	257.8	337.7	NULL	NULL	NULL	01-APR-2007	30-APR-2007
12	CHROMIUM, HEXAVALENT (AS CR)	Month	0.066	0.070	NULL	NULL	NULL	01-APR-2007	30-APR-2007
13	BOD5	Month	42.2	64.4	NULL	NULL	NULL	01-APR-2007	30-APR-2007
14	SULFIDE, TOTAL (AS S)	Month	0.58	1.12	NULL	NULL	NULL	01-APR-2007	30-APR-2007
15	PHENOLS	Month	0.18	0.27	NULL	NULL	NULL	01-APR-2007	30-APR-2007
16	FLOW	Month	1.23	1.68	NULL	NULL	NULL	01-APR-2007	30-APR-2007
17	SULFIDE, TOTAL (AS S)	Month	0.41	1.15	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
18	CHROMIUM, TOTAL (AS CR)	Month	0.071	0.071	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
19	FLOW	Month	1.08	1.49	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
20	AMMONIA, AS N	Month	7.26	9.82	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
21	TSS	Month	158.7	229.4	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
22	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.044	<0.044	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
23	OIL & GREASE	Month	18.7	38.9	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
24	CARBON, TOTAL ORGANIC	Month	296.3	434.4	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
25	PHENOLS	Month	0.23	0.40	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
26	BOD5	Month	51.3	102.0	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
27	PH	Month	NULL	NULL	7.1	NULL	7.8	01-MAY-2007	31-MAY-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
8	TSS	Month	78.4	183.4	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
9	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.057	<0.057	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
0	CARBON, TOTAL ORGANIC	Month	210.0	260.8	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
1	OIL & GREASE	Month	49.3	134.7	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
2	SULFIDE, TOTAL (AS S)	Month	0.31	0.71	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
3	AMMONIA, AS N	Month	18.17	51.91	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
4	CHROMIUM, TOTAL (AS CR)	Month	<0.057	<0.057	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
5	BOD5	Month	32.6	69.1	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
6	PH	Month	NULL	NULL	7.1	NULL	8.9	01-JUN-2007	30-JUN-2007
7	PHENOLS	Month	0.12	0.30	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
8	FLOW	Month	0.82	1.36	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
9	PHENOLS	Month	0.09	0.17	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
0	BOD5	Month	18.8	34.9	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
1	OIL & GREASE	Month	12.0	18.7	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
2	CARBON, TOTAL ORGANIC	Month	113.4	172.2	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
3	AMMONIA, AS N	Month	3.04	5.64	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
4	TSS	Month	60.4	110.4	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
5	FLOW	Month	0.77	1.35	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
6	SULFIDE, TOTAL (AS S)	Month	0.06	0.16	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
7	CHROMIUM, TOTAL (AS CR)	Month	<0.030	<0.030	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
8	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.030	<0.030	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
9	PH	Month	NULL	NULL	7.4	NULL	7.8	01-JUL-2007	31-JUL-2007
00	PH	Month	NULL	NULL	7.3	NULL	8.1	01-AUG-2007	31-AUG-2007
01	CHROMIUM, TOTAL (AS CR)	Month	0.038	0.038	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
02	TSS	Month	55.7	85.6	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
03	BOD5	Month	18.2	32.7	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
04	PHENOLS	Month	0.09	0.14	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
05	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.027	<0.027	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
06	FLOW	Month	0.84	1.23	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
07	AMMONIA, AS N	Month	2.65	3.98	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
08	OIL & GREASE	Month	3.0	8.8	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
09	CARBON, TOTAL ORGANIC	Month	88.0	102.3	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
10	SULFIDE, TOTAL (AS S)	Month	0.06	0.08	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
11	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.027	<0.027	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
12	BOD5	Month	18.8	26.1	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
13	FLOW	Month	0.82	1.24	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
14	AMMONIA, AS N	Month	5.46	9.17	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
15	OIL & GREASE	Month	5.3	10.8	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
16	CHROMIUM, TOTAL (AS CR)	Month	<0.267	<0.267	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
17	CARBON, TOTAL ORGANIC	Month	140.9	194.0	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
18	SULFIDE, TOTAL (AS S)	Month	0.05	0.12	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
19	PHENOLS	Month	0.16	0.34	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
20	TSS	Month	78.4	113.8	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
21	PH	Month	NULL	NULL	7.0	NULL	8.1	01-SEP-2007	30-SEP-2007
22	OIL & GREASE	Month	7.1	12.6	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
23	CHROMIUM, TOTAL (AS CR)	Month	<0.04	<0.04	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
24	SULFIDE, TOTAL (AS S)	Month	0.08	0.10	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
25	CARBON, TOTAL ORGANIC	Month	222.6	324.3	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
26	FLOW	Month	0.94	1.56	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
27	TSS	Month	178.0	237.0	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
28	BOD5	Month	21.7	28.3	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
29	PH	Month	NULL	NULL	7.0	NULL	8.0	01-OCT-2007	31-OCT-2007
30	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.04	<0.04	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
31	AMMONIA, AS N	Month	14.64	39.36	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
32	PHENOLS	Month	0.53	1.27	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
33	AMMONIA, AS N	Month	41.41	75.61	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
34	PHENOLS	Month	0.38	0.58	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
35	OIL & GREASE	Month	11.5	21.4	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
36	CARBON, TOTAL ORGANIC	Month	253.6	300.3	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
37	BOD5	Month	32.6	56.1	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
38	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.051	<0.051	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
39	CHROMIUM, TOTAL (AS CR)	Month	<0.051	<0.051	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
40	TSS	Month	175.7	241.4	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
41	PH	Month	NULL	NULL	7.3	NULL	7.8	01-NOV-2007	30-NOV-2007
42	FLOW	Month	0.96	1.25	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
43	SULFIDE, TOTAL (AS S)	Month	0.14	0.22	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
44	FLOW	Month	0.88	1.38	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
45	PHENOLS	Month	0.16	0.41	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
46	BOD5	Month	30.3	74.0	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
47	OIL & GREASE	Month	14.9	37.7	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
48	CARBON, TOTAL ORGANIC	Month	242.4	332.5	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
49	CHROMIUM, TOTAL (AS CR)	Month	<0.047	<0.047	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
50	AMMONIA, AS N	Month	58.48	199.59	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
51	PH	Month	NULL	NULL	7.0	NULL	8.4	01-DEC-2007	31-DEC-2007
52	TSS	Month	146.6	189.9	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
53	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.047	<0.047	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
54	SULFIDE, TOTAL (AS S)	Month	0.14	0.23	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
55	TSS	Month	188.9	296.5	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
56	CARBON, TOTAL ORGANIC	Month	347.3	401.1	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
57	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.056	<0.056	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
58	BOD5	Month	35.6	68.3	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
59	SULFIDE, TOTAL (AS S)	Month	0.14	0.28	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
60	AMMONIA, AS N	Month	11.61	43.65	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
61	PHENOLS	Month	0.16	0.20	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
62	CHROMIUM, TOTAL (AS CR)	Month	<0.056	<0.056	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
63	PH	Month	NULL	NULL	7.3	NULL	8.1	01-JAN-2008	31-JAN-2008
64	OIL & GREASE	Month	9.1	13.9	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
65	FLOW	Month	1.21	1.44	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
66	SULFIDE, TOTAL (AS S)	Month	0.15	0.30	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
67	BOD5	Month	27.0	40.1	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
68	CHROMIUM, TOTAL (AS CR)	Month	<0.037	<0.037	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
69	FLOW	Month	0.70	1.36	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
70	PH	Month	NULL	NULL	7.6	NULL	8.4	01-FEB-2008	29-FEB-2008
71	PHENOLS	Month	0.35	0.65	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
72	TSS	Month	257.7	476.6	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
73	AMMONIA, AS N	Month	137.1	430.3	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
74	OIL & GREASE	Month	12.1	28.6	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
75	CARBON, TOTAL ORGANIC	Month	246.7	300.9	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
76	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.037	<0.037	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
77	OIL & GREASE	Month	10.0	15.5	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
78	CARBON, TOTAL ORGANIC	Month	488.0	677.8	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
79	CHROMIUM, TOTAL (AS CR)	Month	<0.049	<0.049	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
80	PH	Month	NULL	NULL	7.8	NULL	8.4	01-MAR-2008	31-MAR-2008
81	FLOW	Month	1.31	1.55	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
82	TSS	Month	128.2	195.6	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
83	AMMONIA, AS N	Month	78.71	265.59	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
84	PHENOLS	Month	0.33	0.43	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
85	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.049	<0.049	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
86	BOD5	Month	68.4	123.0	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
87	SULFIDE, TOTAL (AS S)	Month	0.22	0.29	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
88	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.056	<0.056	NULL	NULL	NULL	01-APR-2008	30-APR-2008
89	PH	Month	NULL	NULL	7.4	NULL	7.8	01-APR-2008	30-APR-2008
90	FLOW	Month	1.09	1.35	NULL	NULL	NULL	01-APR-2008	30-APR-2008
91	OIL & GREASE	Month	18.7	45.4	NULL	NULL	NULL	01-APR-2008	30-APR-2008
92	SULFIDE, TOTAL (AS S)	Month	0.20	0.31	NULL	NULL	NULL	01-APR-2008	30-APR-2008
93	CHROMIUM, TOTAL (AS CR)	Month	<0.056	<0.056	NULL	NULL	NULL	01-APR-2008	30-APR-2008
94	TSS	Month	109.0	199.9	NULL	NULL	NULL	01-APR-2008	30-APR-2008
95	AMMONIA, AS N	Month	8.44	30.27	NULL	NULL	NULL	01-APR-2008	30-APR-2008
96	CARBON, TOTAL ORGANIC	Month	440.8	576.9	NULL	NULL	NULL	01-APR-2008	30-APR-2008
97	BOD5	Month	35.3	53.6	NULL	NULL	NULL	01-APR-2008	30-APR-2008
98	PHENOLS	Month	1.00	1.92	NULL	NULL	NULL	01-APR-2008	30-APR-2008
99	PH	Month	NULL	NULL	7.1	NULL	8.1	01-MAY-2008	31-MAY-2008
00	TSS	Month	227.6	570.9	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
01	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.051	<0.051	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
02	PHENOLS	Month	0.12	0.18	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
03	CARBON, TOTAL ORGANIC	Month	362.9	499.0	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
04	CHROMIUM, TOTAL (AS CR)	Month	<0.051	<0.051	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
05	BOD5	Month	60.6	152.2	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
06	FLOW	Month	1.08	1.39	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
07	OIL & GREASE	Month	5.0	8.4	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
08	SULFIDE, TOTAL (AS S)	Month	0.07	0.08	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
09	AMMONIA, AS N	Month	4.58	6.68	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
10	AMMONIA, AS N	Month	5.39	9.35	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
11	CHROMIUM, TOTAL (AS CR)	Month	<0.045	<0.045	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
12	PH	Month	NULL	NULL	7.1	NULL	7.8	01-JUN-2008	30-JUN-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
13	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.045	<0.045	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
14	PHENOLS	Month	0.05	0.09	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
15	FLOW	Month	0.77	1.39	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
16	BOD5	Month	26.5	44.4	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
17	TSS	Month	165.7	255.6	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
18	OIL & GREASE	Month	5.3	9.6	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
19	CARBON, TOTAL ORGANIC	Month	332.5	594.0	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
20	SULFIDE, TOTAL (AS S)	Month	0.06	0.11	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
21	PH	Month	NULL	NULL	7.2	NULL	7.6	01-JUL-2008	31-JUL-2008
22	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.040	<0.040	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
23	PHENOLS	Month	0.06	0.15	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
24	CHROMIUM, TOTAL (AS CR)	Month	<0.040	<0.040	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
25	TSS	Month	141.9	305.0	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
26	BOD5	Month	23.0	41.8	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
27	FLOW	Month	0.76	1.33	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
28	SULFIDE, TOTAL (AS S)	Month	0.04	0.09	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
29	CARBON, TOTAL ORGANIC	Month	313.7	533.6	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
30	AMMONIA, AS N	Month	4.54	13.26	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
31	OIL & GREASE	Month	1.4	2.0	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
32	SULFIDE, TOTAL (AS S)	Month	0.07	0.13	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
33	TSS	Month	156.2	304.2	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
34	PHENOLS	Month	0.06	0.12	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
35	BOD5	Month	34.6	54.6	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
36	AMMONIA, AS N	Month	16.72	31.51	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
37	CARBON, TOTAL ORGANIC	Month	368.6	475.9	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
38	OIL & GREASE	Month	5.1	7.4	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
39	PH	Month	NULL	NULL	7.0	NULL	7.7	01-AUG-2008	31-AUG-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
40	CHROMIUM, TOTAL (AS CR)	Month	<0.048	<0.048	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
41	FLOW	Month	1.07	1.51	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
42	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.048	<0.048	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
43	PH	Month	NULL	NULL	7.2	NULL	7.7	01-SEP-2008	30-SEP-2008
44	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.045	<0.045	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
45	PHENOLS	Month	0.15	0.20	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
46	CHROMIUM, TOTAL (AS CR)	Month	<0.045	<0.045	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
47	BOD5	Month	37.8	64.7	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
48	OIL & GREASE	Month	3.7	6.7	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
49	SULFIDE, TOTAL (AS S)	Month	0.07	0.10	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
50	AMMONIA, AS N	Month	8.43	16.83	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
51	FLOW	Month	0.99	1.36	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
52	TSS	Month	162.6	219.6	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
53	CARBON, TOTAL ORGANIC	Month	198.3	240.5	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
54	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.031	<0.031	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
55	FLOW	Month	0.98	1.36	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
56	AMMONIA, AS N	Month	5.54	11.15	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
57	PHENOLS	Month	0.04	0.09	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
58	TSS	Month	162.3	288.3	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
59	CHROMIUM, TOTAL (AS CR)	Month	<0.031	<0.031	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
60	BOD5	Month	37.6	47.5	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
61	PH	Month	NULL	NULL	7.3	NULL	8.0	01-OCT-2008	31-OCT-2008
62	OIL & GREASE	Month	9.0	12.8	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
63	SULFIDE, TOTAL (AS S)	Month	0.09	0.12	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
64	CARBON, TOTAL ORGANIC	Month	158.7	217.0	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
65	BOD5	Month	30.7	49.7	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
66	FLOW	Month	0.96	1.33	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
67	PHENOLS	Month	0.07	0.12	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
68	CARBON, TOTAL ORGANIC	Month	161.0	180.9	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
69	SULFIDE, TOTAL (AS S)	Month	0.06	0.10	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
70	TSS	Month	165.0	326.6	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
71	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.034	<0.034	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
72	AMMONIA, AS N	Month	5.98	13.96	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
73	OIL & GREASE	Month	10.7	18.2	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
74	CHROMIUM, TOTAL (AS CR)	Month	<0.034	<0.034	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
75	PH	Month	NULL	NULL	7.2	NULL	7.9	01-NOV-2008	30-NOV-2008
76	BOD5	Month	79.8	225.1	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
77	CHROMIUM, TOTAL (AS CR)	Month	<0.049	<0.049	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
78	PHENOLS	Month	0.11	0.17	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
79	TSS	Month	202.7	670.0	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
80	FLOW	Month	1.48	2.17	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
81	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.049	<0.049	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
82	PH	Month	NULL	NULL	7.3	NULL	8.0	01-DEC-2008	31-DEC-2008
83	AMMONIA, AS N	Month	75.72	165.21	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
84	SULFIDE, TOTAL (AS S)	Month	0.24	0.74	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
85	CARBON, TOTAL ORGANIC	Month	222.3	280.7	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
86	OIL & GREASE	Month	12.6	35.7	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
87	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.052	<0.052	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
88	FLOW	Month	1.49	2.52	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
89	BOD5	Month	87.1	128.8	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
90	PHENOLS	Month	0.10	0.19	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
91	TSS	Month	283.0	128.8	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
92	PH	Month	NULL	NULL	7.0	NULL	7.5	01-JAN-2009	31-JAN-2009
93	CHROMIUM, TOTAL (AS CR)	Month	<0.069	<0.069	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
94	AMMONIA, AS N	Month	23.89	77.65	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
95	SULFIDE, TOTAL (AS S)	Month	0.18	0.32	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
96	OIL & GREASE	Month	21.5	28.6	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
97	CARBON, TOTAL ORGANIC	Month	279.9	388.0	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
98	AMMONIA, AS N	Month	29.77	105.25	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
99	CHROMIUM, TOTAL (AS CR)	Month	<0.067	<0.067	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
00	TSS	Month	383.6	521.1	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
01	BOD5	Month	82.3	120.2	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
02	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.067	<0.067	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
03	OIL & GREASE	Month	9.2	13.0	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
04	SULFIDE, TOTAL (AS S)	Month	0.19	0.23	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
05	PHENOLS	Month	0.18	0.24	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
06	FLOW	Month	1.41	2.08	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
07	PH	Month	NULL	NULL	7.2	NULL	8.0	01-FEB-2009	28-FEB-2009
08	CARBON, TOTAL ORGANIC	Month	288.5	340.4	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
09	CHROMIUM, TOTAL (AS CR)	Month	<0.049	<0.049	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
10	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.049	<0.049	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
11	FLOW	Month	1.32	1.80	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
12	BOD5	Month	47.8	88.4	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
13	AMMONIA, AS N	Month	71.54	187.62	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
14	OIL & GREASE	Month	10.8	18.5	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
15	SULFIDE, TOTAL (AS S)	Month	0.06	0.17	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
16	TSS	Month	269.0	489.3	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
17	PH	Month	NULL	NULL	6.8	NULL	7.8	01-MAR-2009	31-MAR-2009
18	PHENOLS	Month	0.20	0.38	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
19	CARBON, TOTAL ORGANIC	Month	222.4	273.6	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
20	SULFIDE, TOTAL (AS S)	Month	0.19	0.29	NULL	NULL	NULL	01-APR-2009	30-APR-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
21	TSS	Month	189.5	253.2	NULL	NULL	NULL	01-APR-2009	30-APR-2009
22	PH	Month	NULL	NULL	6.8	NULL	8.4	01-APR-2009	30-APR-2009
23	FLOW	Month	0.89	1.23	NULL	NULL	NULL	01-APR-2009	30-APR-2009
24	PHENOLS	Month	0.13	0.20	NULL	NULL	NULL	01-APR-2009	30-APR-2009
25	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.033	<0.033	NULL	NULL	NULL	01-APR-2009	30-APR-2009
26	BOD5	Month	42.4	63.8	NULL	NULL	NULL	01-APR-2009	30-APR-2009
27	CHROMIUM, TOTAL (AS CR)	Month	<0.033	<0.033	NULL	NULL	NULL	01-APR-2009	30-APR-2009
28	CARBON, TOTAL ORGANIC	Month	238.8	298.8	NULL	NULL	NULL	01-APR-2009	30-APR-2009
29	OIL & GREASE	Month	5.7	12.3	NULL	NULL	NULL	01-APR-2009	30-APR-2009
30	AMMONIA, AS N	Month	297.32	442.33	NULL	NULL	NULL	01-APR-2009	30-APR-2009
31	SULFIDE, TOTAL (AS S)	Month	0.05	0.08	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
32	AMMONIA, AS N	Month	229.22	350.39	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
33	FLOW	Month	1.17	1.64	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
34	TSS	Month	241.8	340.5	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
35	PH	Month	NULL	NULL	7.1	NULL	8.4	01-MAY-2009	31-MAY-2009
36	CARBON, TOTAL ORGANIC	Month	221.7	240.4	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
37	BOD5	Month	35.6	54.8	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
38	CHROMIUM, TOTAL (AS CR)	Month	<0.059	<0.059	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
39	OIL & GREASE	Month	11.8	19.1	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
40	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.059	<0.059	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
41	PHENOLS	Month	0.06	0.09	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
42	TSS	Month	240.3	367.3	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
43	CHROMIUM, TOTAL (AS CR)	Month	<0.036	<0.036	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
44	BOD5	Month	91.9	163.3	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
45	PHENOLS	Month	0.19	0.43	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
46	OIL & GREASE	Month	11.8	19.0	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
47	PH	Month	NULL	NULL	7.0	NULL	7.8	01-JUN-2009	30-JUN-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
48	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.036	<0.036	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
49	SULFIDE, TOTAL (AS S)	Month	0.09	0.25	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
50	AMMONIA, AS N	Month	72.07	149.35	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
51	FLOW	Month	1.27	1.93	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
52	CARBON, TOTAL ORGANIC	Month	363.4	492.9	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
53	PHENOLS	Month	0.15	0.25	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
54	CHROMIUM, TOTAL (AS CR)	Month	<0.026	<0.026	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
55	BOD5	Month	44.9	73.5	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
56	CARBON, TOTAL ORGANIC	Month	282.3	405.1	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
57	SULFIDE, TOTAL (AS S)	Month	0.09	0.22	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
58	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.026	<0.026	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
59	OIL & GREASE	Month	35.3	108.8	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
60	TSS	Month	119.6	234.2	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
61	PH	Month	NULL	NULL	7.0	NULL	7.8	01-JUL-2009	31-JUL-2009
62	FLOW	Month	1.11	1.70	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
63	AMMONIA, AS N	Month	10.78	27.87	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
64	SULFIDE, TOTAL (AS S)	Month	0.26	0.29	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
65	AMMONIA, AS N	Month	5.04	14.28	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
66	PHENOLS	Month	0.10	0.16	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
67	CHROMIUM, TOTAL (AS CR)	Month	<0.046	<0.046	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
68	CHROMIUM, HEXAVALENT (AS CR)	Month	<0.034	<0.046	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
69	PH	Month	NULL	NULL	7.2	NULL	7.8	01-AUG-2009	31-AUG-2009
70	TSS	Month	147.4	248.4	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
71	BOD5	Month	62.4	99.4	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
72	OIL & GREASE	Month	20.9	27.8	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
73	FLOW	Month	1.43	2.94	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
74	CARBON, TOTAL ORGANIC	Month	419.3	451.9	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
75	SULFIDE, TOTAL (AS S)	Month	0.13	0.19	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
76	TSS	Month	114.7	175.9	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
77	CARBON, TOTAL ORGANIC	Month	395.9	471.9	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
78	PHENOLS	Month	0.15	0.19	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
79	BOD5	Month	36.6	55.5	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
80	CHROMIUM, HEXAVALENT (AS CR)	Month	<QL	<QL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
81	FLOW	Month	1.30	1.66	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
82	CHROMIUM, TOTAL (AS CR)	Month	<QL	<QL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
83	PH	Month	NULL	NULL	7.2	NULL	7.7	01-SEP-2009	30-SEP-2009
84	OIL & GREASE	Month	23.3	32.6	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
85	AMMONIA, AS N	Month	4.64	8.12	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
86	BOD5	Month	21.7	34.7	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
87	PH	Month	NULL	NULL	7.6	NULL	8.0	01-OCT-2009	31-OCT-2009
88	FLOW	Month	0.95	2.32	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
89	CHROMIUM, HEXAVALENT (AS CR)	Month	<QL	<QL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
90	PHENOLS	Month	0.10	0.17	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
91	CHROMIUM, TOTAL (AS CR)	Month	<QL	<QL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
92	SULFIDE, TOTAL (AS S)	Month	0.10	0.15	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
93	TSS	Month	98.0	163.3	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
94	AMMONIA, AS N	Month	2.15	3.57	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
95	OIL & GREASE	Month	13.8	23.5	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
96	CARBON, TOTAL ORGANIC	Month	106.8	163.5	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
97	PHENOLS	Month	0.12	0.24	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
98	TSS	Month	158.9	292.3	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
99	CHROMIUM, TOTAL (AS CR)	Month	<QL	<QL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
00	BOD5	Month	17.2	77.8	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
01	PH	Month	NULL	NULL	7.5	NULL	7.9	01-NOV-2009	30-NOV-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
02	FLOW	Month	1.44	1.78	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
03	CHROMIUM, HEXAVALENT (AS CR)	Month	<QL	<QL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
04	CARBON, TOTAL ORGANIC	Month	241.2	299.4	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
05	SULFIDE, TOTAL (AS S)	Month	<QL	<QL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
06	OIL & GREASE	Month	<QL	<QL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
07	AMMONIA, AS N	Month	14.17	75.29	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
08	CARBON, TOTAL ORGANIC	Month	247.2	265.3	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
09	CHROMIUM, HEXAVALENT (AS CR)	Month	<QL	<QL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
10	PHENOLS	Month	0.05	0.19	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
11	CHROMIUM, TOTAL (AS CR)	Month	<QL	<QL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
12	TSS	Month	272.9	359.2	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
13	OIL & GREASE	Month	<QL	<QL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
14	PH	Month	NULL	NULL	7.5	NULL	7.9	01-DEC-2009	31-DEC-2009
15	AMMONIA, AS N	Month	8.90	20.06	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
16	BOD5	Month	25.8	86.5	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
17	FLOW	Month	1.54	1.73	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
18	SULFIDE, TOTAL (AS S)	Month	<QL	<QL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009

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DMR Data

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
	FLOW	Month	71.3	72.0	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.6	01-NOV-2006	30-NOV-2006
	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-NOV-2006	30-NOV-2006
	FLOW	Month	52.5	70.0	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.2	01-DEC-2006	31-DEC-2006
	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	29	01-DEC-2006	31-DEC-2006
	FLOW	Month	45.9	46.8	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	2.1	01-JAN-2007	31-JAN-2007
	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-JAN-2007	31-JAN-2007
0	FLOW	Month	42.0	42.8	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
1	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.8	01-FEB-2007	28-FEB-2007
2	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	24	01-FEB-2007	28-FEB-2007
3	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	34	01-MAR-2007	31-MAR-2007
4	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	2.6	01-MAR-2007	31-MAR-2007
5	FLOW	Month	44.1	44.8	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
6	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	35	01-APR-2007	30-APR-2007
7	FLOW	Month	67.7	70.0	NULL	NULL	NULL	01-APR-2007	30-APR-2007
8	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	3.4	01-APR-2007	30-APR-2007
9	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	35	01-MAY-2007	31-MAY-2007
0	FLOW	Month	72.3	72.8	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
1	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.0	01-MAY-2007	31-MAY-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
2	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	41	01-JUN-2007	30-JUN-2007
3	FLOW	Month	73.4	74.4	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
4	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	3.9	01-JUN-2007	30-JUN-2007
5	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.7	01-JUL-2007	31-JUL-2007
6	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	42	01-JUL-2007	31-JUL-2007
7	FLOW	Month	73.6	73.6	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
8	FLOW	Month	74.0	74.4	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
9	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	43	01-AUG-2007	31-AUG-2007
0	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.9	01-AUG-2007	31-AUG-2007
1	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.0	01-SEP-2007	30-SEP-2007
2	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	42	01-SEP-2007	30-SEP-2007
3	FLOW	Month	70.5	74.4	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
4	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.6	01-OCT-2007	31-OCT-2007
5	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	37	01-OCT-2007	31-OCT-2007
6	FLOW	Month	67.4	73.6	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
7	FLOW	Month	47.2	47.5	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
8	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	39	01-NOV-2007	30-NOV-2007
9	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	3.2	01-NOV-2007	30-NOV-2007
0	FLOW	Month	47.3	47.5	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
1	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-DEC-2007	31-DEC-2007
2	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.4	01-DEC-2007	31-DEC-2007
3	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	2.8	01-JAN-2008	31-JAN-2008
4	FLOW	Month	46.1	47.5	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
5	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-JAN-2008	31-JAN-2008
6	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.0	01-FEB-2008	29-FEB-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
7	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	27	01-FEB-2008	29-FEB-2008
8	FLOW	Month	46.1	46.5	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
9	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	4.5	01-MAR-2008	31-MAR-2008
0	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	28	01-MAR-2008	31-MAR-2008
1	FLOW	Month	46.9	47.1	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
2	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	34	01-APR-2008	30-APR-2008
3	FLOW	Month	60.5	75.2	NULL	NULL	NULL	01-APR-2008	30-APR-2008
4	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	2.5	01-APR-2008	30-APR-2008
5	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	2.0	01-MAY-2008	31-MAY-2008
6	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	36	01-MAY-2008	31-MAY-2008
7	FLOW	Month	71.1	72.0	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
8	FLOW	Month	71.1	72.0	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
9	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	41	01-JUN-2008	30-JUN-2008
0	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	4.7	01-JUN-2008	30-JUN-2008
1	FLOW	Month	71.1	72.0	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
2	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	43	01-JUL-2008	31-JUL-2008
3	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	5.0	01-JUL-2008	31-JUL-2008
4	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	2.3	01-AUG-2008	31-AUG-2008
5	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	44	01-AUG-2008	31-AUG-2008
6	FLOW	Month	73.0	74.4	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
7	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.0	01-SEP-2008	30-SEP-2008
8	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	39	01-SEP-2008	30-SEP-2008
9	FLOW	Month	72.4	72.8	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
0	FLOW	Month	72.4	72.8	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
1	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.4	01-OCT-2008	31-OCT-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
2	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	35	01-OCT-2008	31-OCT-2008
3	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	28	01-NOV-2008	30-NOV-2008
4	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.2	01-NOV-2008	30-NOV-2008
5	FLOW	Month	64.9	72.0	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
6	FLOW	Month	46.3	48.7	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
7	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	35	01-DEC-2008	31-DEC-2008
8	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.3	01-DEC-2008	31-DEC-2008
9	FLOW	Month	46.7	48.7	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
0	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	36	01-JAN-2009	31-JAN-2009
1	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.3	01-JAN-2009	31-JAN-2009
2	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.5	01-FEB-2009	28-FEB-2009
3	FLOW	Month	46.7	48.7	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
4	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	26	01-FEB-2009	28-FEB-2009
5	FLOW	Month	45.0	45.8	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
6	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	2.3	01-MAR-2009	31-MAR-2009
7	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-MAR-2009	31-MAR-2009
8	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	34	01-APR-2009	30-APR-2009
9	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.2	01-APR-2009	30-APR-2009
0	FLOW	Month	46.4	47.1	NULL	NULL	NULL	01-APR-2009	30-APR-2009
1	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	33	01-MAY-2009	31-MAY-2009
2	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.7	01-MAY-2009	31-MAY-2009
3	FLOW	Month	72.2	72.8	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
4	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	38	01-JUN-2009	30-JUN-2009
5	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	2.1	01-JUN-2009	30-JUN-2009
6	FLOW	Month	72.3	72.8	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009

ermit No	VA0003018	Facility Name	Western Refining Yorktown Incorporated	Outfall No	102

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
7	FLOW	Month	73.6	74.4	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
8	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	38	01-JUL-2009	31-JUL-2009
9	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.5	01-JUL-2009	31-JUL-2009
00	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.6	01-AUG-2009	31-AUG-2009
01	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	42	01-AUG-2009	31-AUG-2009
02	FLOW	Month	73.9	74.4	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
03	FLOW	Month	72.8	72.8	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
04	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	36	01-SEP-2009	30-SEP-2009
05	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.6	01-SEP-2009	30-SEP-2009
06	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	36	01-OCT-2009	31-OCT-2009
07	FLOW	Month	72.8	72.8	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
08	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.3	01-OCT-2009	31-OCT-2009
09	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	34	01-NOV-2009	30-NOV-2009
10	FLOW	Month	72.9	74.4	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
11	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	0.1	01-NOV-2009	30-NOV-2009
12	CARBON, TOTAL ORGANIC, NET INCREASE	Month	NULL	NULL	NULL	NULL	1.3	01-DEC-2009	31-DEC-2009
13	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	34	01-DEC-2009	31-DEC-2009
14	FLOW	Month	72.4	72.8	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009

Western Refining Yorktown Inc.
DMR Data

ermit No: VA000301	Facility Name: Western Refining Yorktown, Incorporat		Outfall No: 002					

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.01	1.27	01-NOV-2006	30-NOV-2006
	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.10	0.15	01-NOV-2006	30-NOV-2006
	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	28	01-NOV-2006	30-NOV-2006
	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-NOV-2006	30-NOV-2006
	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	12.5	15.6	01-NOV-2006	30-NOV-2006
	PH	Month	NULL	NULL	8.0	NULL	8.1	01-NOV-2006	30-NOV-2006
	FLOW	Month	6.3	15.8	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.03	0.10	01-DEC-2006	31-DEC-2006
	FLOW	Month	8.8	22.0	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
0	PH	Month	NULL	NULL	7.9	NULL	8.7	01-DEC-2006	31-DEC-2006
1	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	12.3	13.1	01-DEC-2006	31-DEC-2006
2	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-DEC-2006	31-DEC-2006
3	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	23	01-DEC-2006	31-DEC-2006
4	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.95	1.78	01-DEC-2006	31-DEC-2006
5	FLOW	Month	7.4	28.9	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
6	PH	Month	NULL	NULL	7.3	NULL	8.0	01-JAN-2007	31-JAN-2007
7	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	9.1	14.5	01-JAN-2007	31-JAN-2007
8	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-JAN-2007	31-JAN-2007
9	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	19	01-JAN-2007	31-JAN-2007
0	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.02	0.10	01-JAN-2007	31-JAN-2007
1	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.43	0.92	01-JAN-2007	31-JAN-2007
2	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.82	4.00	01-FEB-2007	28-FEB-2007
3	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	<QL	<QL	01-FEB-2007	28-FEB-2007

ermit No	Facility Name	Outfall No
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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
4	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	11	01-FEB-2007	28-FEB-2007
5	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-FEB-2007	28-FEB-2007
6	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	15.1	20.8	01-FEB-2007	28-FEB-2007
7	PH	Month	NULL	NULL	7.4	NULL	8.1	01-FEB-2007	28-FEB-2007
8	FLOW	Month	10.0	28.9	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
9	FLOW	Month	0.7	2.0	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
0	PH	Month	NULL	NULL	7.6	NULL	9.0	01-MAR-2007	31-MAR-2007
1	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	12.4	14.6	01-MAR-2007	31-MAR-2007
2	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-MAR-2007	31-MAR-2007
3	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	15	01-MAR-2007	31-MAR-2007
4	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.15	0.21	01-MAR-2007	31-MAR-2007
5	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.90	1.46	01-MAR-2007	31-MAR-2007
6	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	13.5	18.7	01-APR-2007	30-APR-2007
7	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	23	01-APR-2007	30-APR-2007
8	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.13	0.20	01-APR-2007	30-APR-2007
9	FLOW	Month	20.3	81.8	NULL	NULL	NULL	01-APR-2007	30-APR-2007
0	PH	Month	NULL	NULL	7.4	NULL	9.0	01-APR-2007	30-APR-2007
1	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.62	1.09	01-APR-2007	30-APR-2007
2	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-APR-2007	30-APR-2007
3	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.12	0.21	01-MAY-2007	31-MAY-2007
4	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	15.5	22.2	01-MAY-2007	31-MAY-2007
5	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	26	01-MAY-2007	31-MAY-2007
6	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.03	1.28	01-MAY-2007	31-MAY-2007
7	OIL & GREASE	Month	NULL	NULL	NULL	3.3	7.4	01-MAY-2007	31-MAY-2007
8	FLOW	Month	10.5	28.9	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
9	PH	Month	NULL	NULL	7.3	NULL	7.9	01-MAY-2007	31-MAY-2007
0	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.46	1.78	01-JUN-2007	30-JUN-2007

ermit No	VA0003018	Facility Name	Western Refining Yorktown Incorporated	Outfall No	002

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
1	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.09	0.12	01-JUN-2007	30-JUN-2007
2	OIL & GREASE	Month	NULL	NULL	NULL	3.0	12.1	01-JUN-2007	30-JUN-2007
3	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	16.1	19.6	01-JUN-2007	30-JUN-2007
4	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	31	01-JUN-2007	30-JUN-2007
5	FLOW	Month	5.1	5.6	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
6	PH	Month	NULL	NULL	7.7	NULL	8.9	01-JUN-2007	30-JUN-2007
7	PH	Month	NULL	NULL	7.7	NULL	8.5	01-JUL-2007	31-JUL-2007
8	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
9	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	27	01-JUL-2007	31-JUL-2007
0	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.02	0.10	01-JUL-2007	31-JUL-2007
1	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.65	1.49	01-JUL-2007	31-JUL-2007
2	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	8.7	11.3	01-JUL-2007	31-JUL-2007
3	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-JUL-2007	31-JUL-2007
4	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.56	2.19	01-AUG-2007	31-AUG-2007
5	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	28	01-AUG-2007	31-AUG-2007
6	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	9.0	13.5	01-AUG-2007	31-AUG-2007
7	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-AUG-2007	31-AUG-2007
8	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.14	0.23	01-AUG-2007	31-AUG-2007
9	FLOW	Month	3.8	5.6	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
0	PH	Month	NULL	NULL	7.6	NULL	8.5	01-AUG-2007	31-AUG-2007
1	PH	Month	NULL	NULL	7.7	NULL	8.5	01-SEP-2007	30-SEP-2007
2	FLOW	Month	3.8	5.6	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
3	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.21	1.76	01-SEP-2007	30-SEP-2007
4	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	6.8	7.2	01-SEP-2007	30-SEP-2007
5	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-SEP-2007	30-SEP-2007
6	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.12	0.13	01-SEP-2007	30-SEP-2007
7	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	28	01-SEP-2007	30-SEP-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
8	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.04	0.11	01-OCT-2007	31-OCT-2007
9	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	24	01-OCT-2007	31-OCT-2007
0	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-OCT-2007	31-OCT-2007
1	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.65	2.94	01-OCT-2007	31-OCT-2007
2	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	11.4	15.0	01-OCT-2007	31-OCT-2007
3	FLOW	Month	3.6	10.2	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
4	PH	Month	NULL	NULL	7.9	NULL	8.6	01-OCT-2007	31-OCT-2007
5	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	12.2	13.1	01-NOV-2007	30-NOV-2007
6	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	<QL	<QL	01-NOV-2007	30-NOV-2007
7	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.86	1.46	01-NOV-2007	30-NOV-2007
8	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	20	01-NOV-2007	30-NOV-2007
9	PH	Month	NULL	NULL	7.9	NULL	8.4	01-NOV-2007	30-NOV-2007
0	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-NOV-2007	30-NOV-2007
1	FLOW	Month	10.6	36.5	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
2	FLOW	Month	6.7	22.0	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
3	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	11.6	13.3	01-DEC-2007	31-DEC-2007
4	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	19	01-DEC-2007	31-DEC-2007
5	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.72	3.23	01-DEC-2007	31-DEC-2007
6	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.02	0.11	01-DEC-2007	31-DEC-2007
7	PH	Month	NULL	NULL	7.4	NULL	9.0	01-DEC-2007	31-DEC-2007
8	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-DEC-2007	31-DEC-2007
9	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	11.4	14.2	01-JAN-2008	31-JAN-2008
00	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	18	01-JAN-2008	31-JAN-2008
01	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-JAN-2008	31-JAN-2008
02	FLOW	Month	3.8	5.6	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
03	PH	Month	NULL	NULL	7.6	NULL	8.4	01-JAN-2008	31-JAN-2008
04	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.05	0.20	01-JAN-2008	31-JAN-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
05	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.02	2.06	01-JAN-2008	31-JAN-2008
06	PH	Month	NULL	NULL	7.7	NULL	9.0	01-FEB-2008	29-FEB-2008
07	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
08	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-FEB-2008	29-FEB-2008
09	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.78	1.40	01-FEB-2008	29-FEB-2008
10	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	11.5	12.8	01-FEB-2008	29-FEB-2008
11	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.03	0.11	01-FEB-2008	29-FEB-2008
12	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	16	01-FEB-2008	29-FEB-2008
13	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	<QL	<QL	01-MAR-2008	31-MAR-2008
14	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	17.8	31.5	01-MAR-2008	31-MAR-2008
15	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-MAR-2008	31-MAR-2008
16	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	17	01-MAR-2008	31-MAR-2008
17	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.77	1.31	01-MAR-2008	31-MAR-2008
18	FLOW	Month	14.5	36.5	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
19	PH	Month	NULL	NULL	7.4	NULL	7.9	01-MAR-2008	31-MAR-2008
20	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-APR-2008	30-APR-2008
21	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	19	01-APR-2008	30-APR-2008
22	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.26	2.05	01-APR-2008	30-APR-2008
23	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	<QL	<QL	01-APR-2008	30-APR-2008
24	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	21.8	23.6	01-APR-2008	30-APR-2008
25	FLOW	Month	8.1	15.8	NULL	NULL	NULL	01-APR-2008	30-APR-2008
26	PH	Month	NULL	NULL	7.5	NULL	8.3	01-APR-2008	30-APR-2008
27	PH	Month	NULL	NULL	7.6	NULL	8.6	01-MAY-2008	31-MAY-2008
28	FLOW	Month	9.3	15.8	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
29	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	14.2	25.9	01-MAY-2008	31-MAY-2008
30	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	<QL	<QL	01-MAY-2008	31-MAY-2008
31	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-MAY-2008	31-MAY-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
32	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	25	01-MAY-2008	31-MAY-2008
33	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.97	1.65	01-MAY-2008	31-MAY-2008
34	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	19.2	27.8	01-JUN-2008	30-JUN-2008
35	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.66	0.82	01-JUN-2008	30-JUN-2008
36	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-JUN-2008	30-JUN-2008
37	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.07	0.16	01-JUN-2008	30-JUN-2008
38	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-JUN-2008	30-JUN-2008
39	FLOW	Month	11.3	15.8	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
40	PH	Month	NULL	NULL	7.6	NULL	7.9	01-JUN-2008	30-JUN-2008
41	PH	Month	NULL	NULL	7.9	NULL	8.3	01-JUL-2008	31-JUL-2008
42	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-JUL-2008	31-JUL-2008
43	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	31	01-JUL-2008	31-JUL-2008
44	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	14.9	24.2	01-JUL-2008	31-JUL-2008
45	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.06	0.07	01-JUL-2008	31-JUL-2008
46	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.77	1.03	01-JUL-2008	31-JUL-2008
47	FLOW	Month	10.2	10.2	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
48	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.08	0.09	01-AUG-2008	31-AUG-2008
49	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-AUG-2008	31-AUG-2008
50	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.84	1.05	01-AUG-2008	31-AUG-2008
51	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-AUG-2008	31-AUG-2008
52	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	10.5	13.4	01-AUG-2008	31-AUG-2008
53	FLOW	Month	11.8	15.8	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
54	PH	Month	NULL	NULL	7.0	NULL	8.3	01-AUG-2008	31-AUG-2008
55	PH	Month	NULL	NULL	7.2	NULL	8.3	01-SEP-2008	30-SEP-2008
56	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
57	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.10	0.13	01-SEP-2008	30-SEP-2008
58	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.39	2.25	01-SEP-2008	30-SEP-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
59	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	29	01-SEP-2008	30-SEP-2008
60	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-SEP-2008	30-SEP-2008
61	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	5.6	6.0	01-SEP-2008	30-SEP-2008
62	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	5.1	6.8	01-OCT-2008	31-OCT-2008
63	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	22	01-OCT-2008	31-OCT-2008
64	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.05	0.07	01-OCT-2008	31-OCT-2008
65	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-OCT-2008	31-OCT-2008
66	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.90	1.19	01-OCT-2008	31-OCT-2008
67	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
68	PH	Month	NULL	NULL	8.0	NULL	9.0	01-OCT-2008	31-OCT-2008
69	PH	Month	NULL	NULL	7.6	NULL	8.6	01-NOV-2008	30-NOV-2008
70	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
71	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-NOV-2008	30-NOV-2008
72	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.05	0.06	01-NOV-2008	30-NOV-2008
73	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	20	01-NOV-2008	30-NOV-2008
74	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.05	1.65	01-NOV-2008	30-NOV-2008
75	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	5.4	6.8	01-NOV-2008	30-NOV-2008
76	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	5.6	7.2	01-DEC-2008	31-DEC-2008
77	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.53	2.96	01-DEC-2008	31-DEC-2008
78	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-DEC-2008	31-DEC-2008
79	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.06	0.11	01-DEC-2008	31-DEC-2008
80	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	20	01-DEC-2008	31-DEC-2008
81	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
82	PH	Month	NULL	NULL	7.2	NULL	8.4	01-DEC-2008	31-DEC-2008
83	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.04	0.05	01-JAN-2009	31-JAN-2009
84	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-JAN-2009	31-JAN-2009
85	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	3.51	11.83	01-JAN-2009	31-JAN-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
86	FLOW	Month	6.7	10.2	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
87	PH	Month	NULL	NULL	7.3	NULL	7.8	01-JAN-2009	31-JAN-2009
88	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	6.5	8.2	01-JAN-2009	31-JAN-2009
89	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	21	01-JAN-2009	31-JAN-2009
90	PH	Month	NULL	NULL	7.9	NULL	8.6	01-FEB-2009	28-FEB-2009
91	FLOW	Month	11.6	15.8	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
92	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.55	0.71	01-FEB-2009	28-FEB-2009
93	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	15	01-FEB-2009	28-FEB-2009
94	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-FEB-2009	28-FEB-2009
95	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	4.5	4.9	01-FEB-2009	28-FEB-2009
96	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.04	0.07	01-FEB-2009	28-FEB-2009
97	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	6.9	8.0	01-MAR-2009	31-MAR-2009
98	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.06	0.12	01-MAR-2009	31-MAR-2009
99	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.91	1.70	01-MAR-2009	31-MAR-2009
00	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	23	01-MAR-2009	31-MAR-2009
01	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-MAR-2009	31-MAR-2009
02	PH	Month	NULL	NULL	7.4	NULL	8.3	01-MAR-2009	31-MAR-2009
03	FLOW	Month	6.7	10.2	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
04	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-APR-2009	30-APR-2009
05	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	27	01-APR-2009	30-APR-2009
06	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.54	2.46	01-APR-2009	30-APR-2009
07	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-APR-2009	30-APR-2009
08	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.12	0.14	01-APR-2009	30-APR-2009
09	PH	Month	NULL	NULL	8.0	NULL	8.4	01-APR-2009	30-APR-2009
10	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	9.3	10.4	01-APR-2009	30-APR-2009
11	PH	Month	NULL	NULL	7.3	NULL	8.5	01-MAY-2009	31-MAY-2009
12	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.13	1.39	01-MAY-2009	31-MAY-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
13	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	9.8	11.8	01-MAY-2009	31-MAY-2009
14	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-MAY-2009	31-MAY-2009
15	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.12	0.14	01-MAY-2009	31-MAY-2009
16	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	23	01-MAY-2009	31-MAY-2009
17	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
18	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-JUN-2009	30-JUN-2009
19	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-JUN-2009	30-JUN-2009
20	PH	Month	NULL	NULL	7.4	NULL	7.9	01-JUN-2009	30-JUN-2009
21	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	6.4	7.9	01-JUN-2009	30-JUN-2009
22	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.07	0.15	01-JUN-2009	30-JUN-2009
23	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.65	1.70	01-JUN-2009	30-JUN-2009
24	FLOW	Month	9.6	15.8	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
25	FLOW	Month	13.2	15.8	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
26	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	7.3	8.5	01-JUL-2009	31-JUL-2009
27	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-JUL-2009	31-JUL-2009
28	PH	Month	NULL	NULL	7.6	NULL	7.9	01-JUL-2009	31-JUL-2009
29	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	36	01-JUL-2009	31-JUL-2009
30	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.25	0.75	01-JUL-2009	31-JUL-2009
31	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.03	2.44	01-JUL-2009	31-JUL-2009
32	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-AUG-2009	31-AUG-2009
33	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	34	01-AUG-2009	31-AUG-2009
34	PH	Month	NULL	NULL	7.3	NULL	8.1	01-AUG-2009	31-AUG-2009
35	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.23	0.60	01-AUG-2009	31-AUG-2009
36	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	11.0	24.1	01-AUG-2009	31-AUG-2009
37	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.03	0.13	01-AUG-2009	31-AUG-2009
38	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
39	FLOW	Month	24.6	81.8	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
40	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	8.9	10.7	01-SEP-2009	30-SEP-2009
41	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.03	1.63	01-SEP-2009	30-SEP-2009
42	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-SEP-2009	30-SEP-2009
43	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	30	01-SEP-2009	30-SEP-2009
44	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.11	0.18	01-SEP-2009	30-SEP-2009
45	PH	Month	NULL	NULL	7.9	NULL	8.3	01-SEP-2009	30-SEP-2009
46	PH	Month	NULL	NULL	7.8	NULL	9.2	01-OCT-2009	31-OCT-2009
47	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.08	0.13	01-OCT-2009	31-OCT-2009
48	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.18	2.03	01-OCT-2009	31-OCT-2009
49	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	6.9	10.4	01-OCT-2009	31-OCT-2009
50	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
51	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-OCT-2009	31-OCT-2009
52	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	22	01-OCT-2009	31-OCT-2009
53	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	1.18	2.64	01-NOV-2009	30-NOV-2009
54	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	25	01-NOV-2009	30-NOV-2009
55	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	8.7	15.3	01-NOV-2009	30-NOV-2009
56	PH	Month	NULL	NULL	7.2	NULL	7.9	01-NOV-2009	30-NOV-2009
57	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.15	0.30	01-NOV-2009	30-NOV-2009
58	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-NOV-2009	30-NOV-2009
59	FLOW	Month	5.6	5.6	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
60	FLOW	Month	8.1	15.8	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
61	TEMPERATURE, WATER (DEG. C)	Month	NULL	NULL	NULL	NULL	19	01-DEC-2009	31-DEC-2009
62	NITROGEN, TOTAL (AS N)	Month	NULL	NULL	NULL	0.94	1.37	01-DEC-2009	31-DEC-2009
63	PHOSPHORUS, TOTAL (AS P)	Month	NULL	NULL	NULL	0.22	0.25	01-DEC-2009	31-DEC-2009
64	OIL & GREASE	Month	NULL	NULL	NULL	<QL	<QL	01-DEC-2009	31-DEC-2009
65	PH	Month	NULL	NULL	7.0	NULL	7.5	01-DEC-2009	31-DEC-2009
66	CARBON, TOTAL ORGANIC	Month	NULL	NULL	NULL	10.3	11.8	01-DEC-2009	31-DEC-2009

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DMR Data

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	PH	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2006	30-NOV-2006
0	PH	Month	NULL	NULL	7.7	NULL	8.0	01-DEC-2006	31-DEC-2006
1	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	<QL	01-DEC-2006	31-DEC-2006
2	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	<QL	01-DEC-2006	31-DEC-2006
3	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	<QL	01-DEC-2006	31-DEC-2006
4	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	<QL	01-DEC-2006	31-DEC-2006
5	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	<QL	01-DEC-2006	31-DEC-2006
6	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	<QL	01-DEC-2006	31-DEC-2006
7	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	<QL	01-DEC-2006	31-DEC-2006
8	FLOW	Month	NULL	1.20	NULL	NULL	NULL	01-DEC-2006	31-DEC-2006
9	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
0	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
1	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
2	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
3	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
4	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
5	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
6	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
7	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2007	31-JAN-2007
8	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	<QL	01-FEB-2007	28-FEB-2007
9	FLOW	Month	NULL	.75	NULL	NULL	NULL	01-FEB-2007	28-FEB-2007
0	PH	Month	NULL	NULL	7.5	NULL	7.5	01-FEB-2007	28-FEB-2007
1	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	<QL	01-FEB-2007	28-FEB-2007
2	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	<QL	01-FEB-2007	28-FEB-2007
3	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	<QL	01-FEB-2007	28-FEB-2007
4	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	<QL	01-FEB-2007	28-FEB-2007
5	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	<QL	01-FEB-2007	28-FEB-2007
6	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	<QL	01-FEB-2007	28-FEB-2007
7	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
8	PH	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
9	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
0	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
1	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
2	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
3	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
4	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
5	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2007	31-MAR-2007
6	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007
7	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007
8	PH	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
9	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007
0	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007
1	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007
2	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007
3	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007
4	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2007	30-APR-2007
5	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	<QL	01-MAY-2007	31-MAY-2007
6	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	<QL	01-MAY-2007	31-MAY-2007
7	FLOW	Month	NULL	0.7	NULL	NULL	NULL	01-MAY-2007	31-MAY-2007
8	PH	Month	NULL	NULL	7.8	NULL	7.8	01-MAY-2007	31-MAY-2007
9	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	<QL	01-MAY-2007	31-MAY-2007
0	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	<QL	01-MAY-2007	31-MAY-2007
1	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	<QL	01-MAY-2007	31-MAY-2007
2	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	<QL	01-MAY-2007	31-MAY-2007
3	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	<QL	01-MAY-2007	31-MAY-2007
4	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
5	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
6	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
7	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
8	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
9	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
0	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
1	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
2	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2007	30-JUN-2007
3	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
4	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
5	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
6	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
7	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
8	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
9	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
0	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
1	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2007	31-JUL-2007
2	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
3	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
4	PH	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
5	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
6	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
7	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
8	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
9	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
0	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2007	31-AUG-2007
1	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	<QL	01-SEP-2007	30-SEP-2007
2	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	<QL	01-SEP-2007	30-SEP-2007
3	PH	Month	NULL	NULL	7.8	NULL	7.8	01-SEP-2007	30-SEP-2007
4	FLOW	Month	NULL	0.40	NULL	NULL	NULL	01-SEP-2007	30-SEP-2007
5	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	<QL	01-SEP-2007	30-SEP-2007
6	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	<QL	01-SEP-2007	30-SEP-2007
7	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	<QL	01-SEP-2007	30-SEP-2007
8	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	<QL	01-SEP-2007	30-SEP-2007
9	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	<QL	01-SEP-2007	30-SEP-2007
00	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	<QL	01-OCT-2007	31-OCT-2007

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
01	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	<QL	01-OCT-2007	31-OCT-2007
02	FLOW	Month	NULL	0.8	NULL	NULL	NULL	01-OCT-2007	31-OCT-2007
03	PH	Month	NULL	NULL	7.7	NULL	7.7	01-OCT-2007	31-OCT-2007
04	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	<QL	01-OCT-2007	31-OCT-2007
05	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	<QL	01-OCT-2007	31-OCT-2007
06	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	<QL	01-OCT-2007	31-OCT-2007
07	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	<QL	01-OCT-2007	31-OCT-2007
08	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	<QL	01-OCT-2007	31-OCT-2007
09	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	<QL	01-NOV-2007	30-NOV-2007
10	PH	Month	NULL	NULL	7.6	NULL	7.7	01-NOV-2007	30-NOV-2007
11	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	<QL	01-NOV-2007	30-NOV-2007
12	FLOW	Month	NULL	0.66	NULL	NULL	NULL	01-NOV-2007	30-NOV-2007
13	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	<QL	01-NOV-2007	30-NOV-2007
14	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	<QL	01-NOV-2007	30-NOV-2007
15	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	<QL	01-NOV-2007	30-NOV-2007
16	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	<QL	01-NOV-2007	30-NOV-2007
17	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	<QL	01-NOV-2007	30-NOV-2007
18	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
19	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
20	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
21	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
22	PH	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
23	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
24	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
25	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
26	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2007	31-DEC-2007
27	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
28	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
29	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
30	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
31	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
32	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
33	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
34	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
35	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2008	31-JAN-2008
36	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
37	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
38	PH	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
39	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
40	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
41	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
42	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
43	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
44	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2008	29-FEB-2008
45	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
46	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
47	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
48	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
49	PH	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
50	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
51	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
52	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008
53	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2008	31-MAR-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
54	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
55	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
56	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
57	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
58	PH	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
59	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
60	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
61	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
62	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2008	30-APR-2008
63	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
64	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
65	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
66	PH	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
67	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
68	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
69	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
70	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
71	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2008	31-MAY-2008
72	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
73	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
74	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
75	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
76	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
77	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
78	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
79	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
80	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2008	30-JUN-2008
81	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
82	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
83	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
84	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
85	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
86	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
87	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
88	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
89	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2008	31-JUL-2008
90	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
91	PH	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
92	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
93	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
94	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
95	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
96	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
97	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
98	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2008	31-AUG-2008
99	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
00	PH	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
01	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
02	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
03	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
04	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
05	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
06	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
07	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2008	30-SEP-2008
08	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
09	PH	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
10	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
11	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
12	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
13	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
14	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
15	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
16	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2008	31-OCT-2008
17	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	0.14	01-NOV-2008	30-NOV-2008
18	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	4.6	01-NOV-2008	30-NOV-2008
19	PH	Month	NULL	NULL	7.7	NULL	7.7	01-NOV-2008	30-NOV-2008
20	FLOW	Month	NULL	5.60	NULL	NULL	NULL	01-NOV-2008	30-NOV-2008
21	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	X	01-NOV-2008	30-NOV-2008
22	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	1.6	01-NOV-2008	30-NOV-2008
23	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	16	01-NOV-2008	30-NOV-2008
24	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	20	01-NOV-2008	30-NOV-2008
25	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	3.5	01-NOV-2008	30-NOV-2008
26	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
27	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
28	PH	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
29	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
30	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
31	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
32	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
33	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
34	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2008	31-DEC-2008
35	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
36	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
37	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
38	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
39	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
40	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
41	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
42	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
43	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JAN-2009	31-JAN-2009
44	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
45	PH	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
46	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
47	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
48	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
49	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
50	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
51	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
52	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-FEB-2009	28-FEB-2009
53	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
54	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
55	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
56	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
57	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
58	PH	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
59	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
60	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
61	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAR-2009	31-MAR-2009
62	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
63	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
64	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
65	PH	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
66	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
67	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
68	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
69	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
70	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-APR-2009	30-APR-2009
71	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
72	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
73	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
74	PH	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
75	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
76	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
77	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
78	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
79	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-MAY-2009	31-MAY-2009
80	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
81	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
82	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
83	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009

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	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
84	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
85	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
86	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
87	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
88	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JUN-2009	30-JUN-2009
89	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
90	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
91	PH	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
92	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
93	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
94	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
95	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
96	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
97	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-JUL-2009	31-JUL-2009
98	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
99	PH	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
00	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
01	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
02	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
03	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
04	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
05	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
06	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-AUG-2009	31-AUG-2009
07	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
08	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
09	PH	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009

ermit No	Facility Name	Outfall No
VA0003018	Western Refining Yorktown Incorporated	201

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
10	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
11	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
12	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
13	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
14	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
15	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-SEP-2009	30-SEP-2009
16	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
17	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
18	PH	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
19	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
20	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
21	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
22	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
23	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
24	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-OCT-2009	31-OCT-2009
25	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
26	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
27	PH	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
28	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
29	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
30	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
31	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
32	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
33	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-NOV-2009	30-NOV-2009
34	TOLUENE (AS C7H8)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
35	ETHYLBENZENE	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
36	TOTAL XYLENES	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009

ermit No	VA0003018	Facility Name	Western Refining Yorktown Incorporated	Outfall No	201

	Parameter Description	Reporting Frequency	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Monitoring Start Date	Monitoring End Date
37	NAPHTHALENE (AS C10H8)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
38	CL2, INST RES MAX	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
39	PH	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
40	FLOW	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
41	PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009
42	BENZENE (AS C6H6)	Month	NULL	NULL	NULL	NULL	NULL	01-DEC-2009	31-DEC-2009

ATTACHMENT 7

SPECIAL CONDITIONS RATIONALE

VPDES PERMIT PROGRAM
LIST OF SPECIAL CONDITIONS RATIONALE

B. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1.a. Nutrient Enriched Waters Reopener

Rationale: Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the draft 2004 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that 83% of the mainstem Bay does not fully support this use support goal under Virginia's water quality assessment guidelines. Nutrient enrichment is cited as one of the primary causes for impairment.

Guidance Memorandum 04-2017 implements DEQ's best professional judgment decision to limit increases in nutrient loading from facilities listed on the Chesapeake Bay Program Significant Discharger List. Guidance Memorandum 04-2017 provides the basis for this decision and specifies the procedure for determining annual effluent limitations for these parameters for each affected facility, as well as monitoring requirements and a special condition to be included in each affected permit. Additionally, Guidance Memorandum 04-2017 includes a special condition for submittal of a Basis of Design Report to construct and operate a range of nutrient removal technologies, including but not limited to the limit of technology, as well as a special condition requiring consideration of alternatives and submittal of a plan to optimize nutrient removal with the existing facility. In accordance with the guidance memorandum, this permit contains a special condition requiring submittal of these reports.

1.b. Total Maximum Daily Load (TMDL) Reopener

Rationale: For specified waters, Section 303(d) of the Clean Water Act requires the development of total maximum daily loads necessary to achieve the applicable water quality standards. The TMDL must take into account seasonal variations and a margin of safety. In addition, Section 62.1-44.19:7 of the State Water Control Law requires the development and implementation of plans to address impaired waters, including TMDLs. This condition allows for the permit to be either modified or, alternatively, revoked and reissued to incorporate the requirements of a TMDL once it is developed. In addition, the reopener recognizes that, in according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan or other wasteload allocation prepared under Section 303 of the Act.

2. Licensed Operator Requirement

Rationale: The Permit Regulation, 9 VAC 25-31-200 D and Code of Virginia 54.1-2300 et. seq., Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators.

3. Operations & Maintenance (O & M) Manual

Rationale: The State Water Control Law, Section 62.1-44.21 allows requests for any information necessary to determine the effect of the discharge on State waters. Section 401 of the Clean Water Act requires the permittee to provide opportunity for the state to review the proposed operations of the facility. In addition, 40 CFR 122.41 (e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) in order to achieve compliance with the permit (includes laboratory controls and QA/QC).

4. Notification Levels

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 and 40 CFR 122.42 (a) require notification of the discharge of certain parameters at or above specific concentrations for existing manufacturing, commercial mining and silvicultural discharges.

5. Quantification Levels Under Part I.A.

Rationale: States are authorized to establish monitoring methods and procedures to compile and analyze data on water quality, as per 40 CFR part 130, Water Quality Planning and Management, subpart 130.4. Section b. of the special condition defines QL and is included per BPJ to clarify the difference between QL and MDL.

6. Compliance Reporting Under Part I.A.

Rationale: Defines reporting requirements for toxic parameters and some conventional parameters with quantification levels to ensure consistent, accurate reporting on submitted reports.

7. Materials Handling and Storage

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-50 A., prohibits the discharge of any wastes into State waters unless authorized by permit. The State Water Control Law, Sec. 62.1-44.18:2, authorizes the Board to prohibit any waste discharge which would threaten public health or safety, interfere with or be incompatible with treatment works or water use. Section 301 of the Clean Water Act prohibits the discharge of any pollutant unless it complies with specific sections of the Act.

8. Hydrostatic Testing

Rationale: Hydrostatic test water discharges are potentially contaminated with facility products and, therefore, qualify for permit coverage under the State Water Control Law and the Clean Water Act.

9. Cooling Water and Boiler Additives

Rationale: Chemical additives may be toxic or otherwise violate the receiving stream water quality standards. Upon notification, the regional office can determine if this new additive will warrant a modification to the permit.

10. Sludge Management Plan

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-420, and 40 CFR 503.1 specify the purpose and applicability for sludge management plans. The VPDES Permit Regulation, 9 VAC 25-31-100 J.4., also sets forth certain detailed information which must be included in a sludge management plan. The VPDES sewage sludge permit application form and its attachments constitute the sludge management plan and will be considered for approval with the VPDES permit. In addition, the Biosolids Use Regulation, 12 VAC 5-585-330 and 340, specifies the general purpose and control requirements for an O&M manual in order to facilitate proper O&M of the facilities to meet the requirements of the regulation.

11. Reuse Wastewater Effluent

Rationale: Section 62.1-44.16 of the State Water Control Law requires the submittal of plans and specifications for industrial facilities with a potential or actual discharge to State waters. Section 62.1-44.19 of the State Water control Law requires the submittal of plans and specifications

for sewerage systems with a potential or actual discharge to State waters. The Board shall consult with and give consideration to the written recommendations of the VDH pertaining to the protection of public health.

Additional Discussion: The permittee submitted a detailed Concept Engineering Report on June 12, 2002 to the DEQ and VDH. The Department approved the CER on October 6, 2003. To date, the CER and/or reclaimed water reuse plan has been amended, August 14, 2006. The proposed condition incorporates new terms and conditions developed since the last reissuance.

C. TOXICS MANAGENENT PROGRAM (TMP)

Rationale: To determine the need for pollutant specific and/or whole effluent toxicity limits as may be required by the VPDES Permit Regulation, 9 VAC 25-31-220 D. and 40 CFR 122.44 (d). See Attachment 9 of this fact sheet for additional justification.

D. STORM WATER MANAGEMENT CONDITIONS

1. Sampling Methodology for Specific Outfalls 002

Rationale: Defines methodology for collecting representative effluent samples in conformance with applicable regulations.

2. General Storm Water Conditions

a. Sample Type

Rationale: This stipulates the proper sampling methodology for qualifying rain events from regulated storm water outfalls. Use of this condition is a BPJ determination based on the EPA storm water multi-sector general permit for industrial activities and is consistent with that permit.

b. Recording of Results

Rationale: This sets forth the information which must be recorded and reported for each storm event sampling (ie. date and duration event, rainfall measurement, and duration between qualifying events). It also requires the maintenance of daily rainfall logs which are to be reported. This condition is carried over from the previous storm water pollution prevention plan requirements contained in the EPA storm water baseline industrial general permit.

c. Sampling Waiver

Rationale: This condition allows the permittee to collect substitute samples of qualifying storm events in the event of adverse climatic conditions. Use of this condition is a BPJ determination based on the EPA storm water multi-sector general permit for industrial activities and is consistent with that permit.

d. Representative Discharge

Rationale: This condition allows the permittee to submit the results of sampling from one outfall as representative of other similar outfalls, provided the permittee can demonstrate that the outfalls are substantially identical. Use of this condition is a BPJ determination based on the EPA storm water multi-sector general permit for industrial activities and is consistent with that permit.

e. Quarterly Visual Examination of Storm Water Quality

Rationale: This condition requires that visual examinations of storm water outfalls take place at a specified frequency and sets forth what information needs to be checked and documented. These examinations assist with the evaluation of the pollution prevention plan by providing a simple, low cost means of assessing the quality of storm water discharge with immediate feedback. Use of this condition is a BPJ determination based on the EPA storm water multi-sector general permit for industrial activities and is consistent with that permit.

f. Releases of Hazardous Substances or Oil in Excess of Reportable Quantities

Rationale: This condition requires that the discharge of hazardous substances or oil from a facility be eliminated or minimized in accordance with the facility's storm water pollution prevention plan. If there is a discharge of a material in excess of a reportable quantity, it establishes the reporting requirements in accordance with state laws and federal regulations. In addition, the pollution prevention plan for the facility must be reviewed and revised as necessary to prevent a reoccurrence of the spill. Use of this condition is a BPJ determination based on the EPA storm water multi-sector general permit for industrial activities and is consistent with that permit.

g. Allowable Non-Storm Water Discharges

Rationale: The listed allowable non-storm water discharges are the same as those allowed by the EPA in their multi-sector general permit, and are the same non-storm water discharges allowed under the Virginia General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity, 9 VAC 25-151-10 et seq. Allowing the same non-storm water discharges in VPDES individual permits provides consistency with other storm water permits for industrial facilities. The non-storm water discharges must meet the conditions in the permit.

3. Storm Water Pollution Prevention Plan

Rationale: The Clean Water Act 402(p) (2) (B) requires permits for storm water discharges associated with industrial activity. VPDES permits for storm water discharges must establish BAT/BCT requirements in accordance with 402(p)(3) of the Act. The Storm Water Pollution Prevention Plan is the vehicle proposed by EPA in the final NPDES General Permits for Storm Water Discharges Associated with Industrial Activity (Federal Register Sept 9, 1992) to meet the requirements of the Act. Additionally, the VPDES Permit Regulation, 9 VAC 25-31-220 K., and 40 CFR 122.44 (k) allow BMPs for the control of toxic pollutants listed in Section 307 (a)(1), and hazardous substances listed in Section 311 of the Clean Water Act where numeric limits are infeasible or BMPs are needed to accomplish the purpose/intent of the law.

4. Facility-specific Storm Water Management Conditions

Rationale: These conditions set forth additional site-specific storm water pollution prevention plan requirements. Use of these conditions is a BPJ determination based on the EPA storm water multi-sector general permit for industrial activities and DEQ's general permit for storm water associated with industrial activities and is consistent with those permits.

ATTACHMENT 8

TOXICS MONITORING/TOXICS REDUCTION/ WET LIMIT RATIONALE

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TIDEWATER REGIONAL OFFICE

5636 Southern Boulevard Virginia Beach, VA 23462

SUBJECT: Toxic Management Program (TMP) Monitoring for Western Refining Yorktown Inc. (VA0003018)

TO: Melinda Woodruff

FROM: Deanna Austin DBA

DATE: March 10, 2010

COPIES: TRO File (PPP #033)

Western Refining Yorktown, Inc. is a refinery producing unleaded gasoline, diesel fuels, liquefied petroleum gas, butane, furnace oil, petroleum coke, and sulfur. The refinery capacity for production is 70,000 barrels of crude oil per day. There are 3 permitted outfalls and 3 permitted internal outfalls. Outfall 001 and 002 discharge to the York River. **Outfall 001** contains discharges from final treated process and sanitary wastewater from the internal outfalls 101 and 102. Outfall 102 is once-through cooling water. **Outfall 002** discharges stormwater associated with industrial activity, fire main wastewater, hydrostatic test discharge water, and can also discharge flows diverted from internal outfalls 101 and 102 when needed. **Outfall 201** is an internal outfall to 002 and discharges hydrostatic test waters. Toxicity monitoring will be added to outfall 201 on an annual basis. DEQ guidance document 00-2012 requires toxicity monitoring for all hydrostatic test waters and since outfall 201 is monitored separately from outfall 002, toxicity monitoring is warranted. Outfall 004 discharges fire main flushing and freeze protection water. Reclamation and reuse waters are used for the processes at outfall 004. Toxicity monitoring will not be placed on outfall 004 at this time. Monitoring of outfall 004 for pollutants is new to this permit term.

Toxicity monitoring has been performed on outfalls 001 and 002 during the previous permit terms. Monitoring for acute and chronic toxicity has been performed using *Mysidopsis bahia*, now known as *Americamysis bahia* (A.b.). During a previous permit reissuance, A.b. was shown to be the most sensitive species. Monitoring has been 1/year. The data collected during the current permit term (2005-2010) is shown below. Toxicity monitoring for outfalls 001 and 002 will continue in the reissued permit.

OUTFALL	DESCRIPT	SPECIES	SAMPLEDT	LC50	SURVIVAL	NOEC	TU	LAB
001	1st Annual Acute	M.b.	11/20/05	100	100		1	CBI
001	2nd Annual Acute	M.b.	11/16/06	100	100		1	CBI
001	3rd Annual Acute	M.b.	11/14/07	100	100		1	CBI
001	4th Annual Acute	M.b.	11/5/08	100	100		1	CBI
001	5th Annual Acute	M.b.	10/21/09	100	100		1	CBI

OUTFALL	DESCRIPT	SPECIES	SAMPLEDT	LC50	SURVIVAL	NOEC	TU	LAB
001	1st Annual Chronic	M.b.	11/15/05		100	100	1	CBI
001	2nd Annual Chronic	M.b.	11/14/06		100	100	1	CBI
001	3rd Annual Chronic	M.b.	11/12/07		100	100	1	CBI
001	4th Annual Chronic	M.b.	11/4/08		100	100	1	CBI
001	5th Annual Chronic	M.b.	10/21/09		85	100	1	CBI
002	1st Annual Acute	M.b.	11/20/05	100	100		1	CBI
002	2nd Annual Acute	M.b.	1/16/06	100	100		1	CBI
002	3rd Annual Acute	M.b.	11/13/07	100	100		1	CBI
002	4th Annual Acute	M.b.	11/5/08	100	100		1	CBI
002	5th Annual Acute	M.b.	10/20/09	100	100		1	CBI
002	1st Annual Chronic	M.b.	11/15/05		100	100	1	CBI
002	2nd Annual Chronic	M.b.	1/14/06		100	65	1	CBI
002	3rd Annual Chronic	M.b.	11/12/07		100	100	1	CBI
002	4th Annual Chronic	M.b.	11/4/08		100	100	1	CBI
002	5th Annual Chronic	M.b.	10/20/09		98	100	1	CBI

M.b. - *Mysidopsis bahia*, which is now known as *Americamysis bahia*

C. TOXICS MANAGEMENT PROGRAM (TMP)

1. Biological Monitoring - Outfalls 001, 002 and 201

a. In accordance with the schedule in 2. below, the permittee shall conduct **annual acute** and **annual chronic** toxicity tests. The permittee shall collect 24-hour, flow proportioned composite samples of final effluent from outfalls 001 and 002. The permittee shall collect a grab sample of final effluent from outfall 201. All toxicity samples shall be taken at the same time as the monitoring in Part I.A. of this permit.

Outfalls 001 and 002

The acute tests to use for outfalls 001 and 002 shall be:
48-Hour Static Acute test using **Americamysis bahia (A.b.)**

Outfall 201

The acute tests to use for outfall 201 shall be:
48 Hour Static Acute test using **Americamysis bahia (A.b.)**
and
48 Hour Static Acute test using **Cyprinodon variegatus (C.v.)**

The acute tests shall be performed with a minimum of 5 dilutions, derived geometrically, for calculation of a valid LC_{50}. Express as the results as TU_a (Acute Toxic Units) by dividing $100/LC_{50}$ for DMR reporting.

Outfalls 001 and 002

The chronic test shall be:
7-Day Static Renewal Survival, Growth and Fecundity test using **Americamysis bahia (A.b.)**

The chronic test shall be conducted in such a manner and at sufficient dilutions (minimum of five dilutions, derived geometrically) to determine the "No Observed Effect Concentration" (NOEC) for survival and reproduction or growth. Results which cannot be

quantified (i.e., a "less than" NOEC value) are not acceptable, and a retest will have to be performed. Express the test NOEC as TU_c (Chronic Toxic Units), by dividing 100/NOEC for DMR reporting. Report the LC_{50} at 48 hours and the IC_{25} with the NOEC's in the test report.

The permittee may provide additional samples to address data variability during the period of initial data generation. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.

b. The test dilutions should be able to determine compliance with the following endpoints:

(1) Acute LC_{50} of 100% equivalent to a TU_a of 1.0 for outfalls 001, 002, and 201.

(2) Chronic NOEC of 18% equivalent to a TU_c 5.55 for outfall 001

(2) Chronic NOEC 2% of equivalent to a TU_c of 50.0 for outfall 002

c. The test data will be evaluated for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests of 1.a. may be discontinued.

d. All applicable data will be reevaluated for reasonable potential at the end of the permit term.

e. If, in the testing according to C.1., any toxicity tests are invalidated, the tests shall be repeated within the testing period that the original test was taken, or if already past that period, within thirty(30) days of notification. If there is no discharge during this period, a sample must be taken during the first discharge.

2. Reporting Schedule:

The permittee shall report the results and supply **one** complete copy of the toxicity test reports specified in this Toxics Management Program to the Tidewater Regional Office. A complete report must contain a

copy of all laboratory benchsheets, certificates of analysis, and all chains of custody. All data shall be submitted by the 10th of the month following sampling. Sampling and reporting shall be in accordance with the following schedule:

(a)	**Conduct first annual acute biological test for outfalls 001, 002, and 201 and conduct first annual chronic biological test for outfalls 001 and 002**	**By December 31, 2011**
(b)	**Submit results of biological test**	**By the 10th of the month following sampling but no later than January 10, 2012**
(c)	**Conduct subsequent annual biological tests for outfalls 001, 002, and 201**	**By December 31, 2012, 2013, and 2014**
(d)	**Submit results of all biological tests**	**By the 10th of the month following sampling but no later than January 10, 2013, 2014, 2015**

ATTACHMENT 9

MATERIAL STORED

EPA Form 2F-IVB

Significant Materials

Significant materials are ubiquitous at the Yorktown Refinery. The refinery is designed and managed to prevent significant materials from being exposed to stormwater runoff. Stormwater collection systems in the refinery are engineered so that where such exposure cannot be controlled, stormwater receives appropriate treatment to remove pollutants associated with the significant materials prior to being discharged to surface waters or recycled for reuse. Refinery stormwater collection and treatment systems are described in Attachment 2F-IVC.

The significant materials stored in the greatest quantities at the refinery are petroleum crude oil, refined petroleum intermediates, and finished liquid and gaseous petroleum products. These materials, as well as acids, caustics, petroleum additives, corrosion inhibitors, and other chemicals used in the refinery are stored in aboveground storage tanks with fixed or floating roofs or drums, transferred in piping, and processed in enclosed vessels.

Dikes are provided around field-constructed aboveground storage tanks in which bulk crude oil, refined petroleum intermediates, and finished petroleum products are stored. The disposition of the stormwater from these dikes is based on inspection and/or analysis for contamination. If oil or other contamination is observed, the stormwater is drained to the water treatment plant for treatment prior to discharge through Outfall 101. The source of the oil or other contamination is determined, repairs or adjustments are made to stop the release, and contaminated soils in the area are remediated or removed. If there is no evidence of oil or other contamination, stormwater from tank dikes may be drained into the surface ditch system for treatment in the settling basin prior to discharge through Outfall 002.

Piping is present throughout the refinery. In the areas indicated on the stormwater drainage map, provided in Attachment I, secondary containment is provided, and stormwater from these areas is conveyed to the water treatment plant for treatment prior to discharge through Outfall 101. All other piping is located to ensure stormwater is contained by the surface ditch system and conveyed to the settling basin for treatment prior to discharge through Outfall 002.

In general, areas of the refinery that have the potential to be oily or to experience spills of other significant materials are paved. Stormwater from these areas drain to the water treatment plant for treatment and ultimate discharge through Outfall 101. Examples of areas that drain to the water treatment plant and Outfall 101 include:

- ⇒ **Dock Transfer Manifolds:** The areas of the dock in which loading hose connections are made to vessels are provided with collection systems and/or sumps to capture stormwater which might have contacted hydrocarbons and convey it to the water treatment plant.

- ⇒ **Marketing Terminal Truck Loading Rack:** Similar to the dock, the areas in which loading hose connections are made to tank trucks at the marketing terminal are paved and graded to drain stormwater to the water treatment plant.

- ⇒ **Rail Car Loading Racks:** Similar to the dock and truck loading rack, the rail car loading racks, at which liquefied petroleum gas, caustic, and ethanol may be transferred to and from rail cars, are graded to drain stormwater to the water treatment plant.

- ⇒ **Pumphouse Blending Manifold:** The pumphouse blending manifold is the area in which the pumps and valves that move and direct oil throughout the Refinery are located. Due to the presence of a great many valves and flanges, this area is paved and graded to drain stormwater to the water treatment plant.

- ⇒ **Fire Brigade Training Area**: Due to the presence of hydrocarbons used in training exercises, the fire training area is paved and graded to drain stormwater to the water treatment plant.

⇒ **Coker, Combination Unit, Ultraformer, ULSD Unit, Hydrogen Plant, Sulfur Recovery Unit, Gasoline Desulfurization Unit, Power Station, Nitrogen Plant, and Water Treatment Plant Process Units:** These areas of the Refinery contain high concentrations of piping, valves, flanges, pumps, and vessels. Due to the increased potential for the presence or release of hydrocarbons or chemicals, these areas are paved and graded or equipped with curbing to channel stormwater to the water treatment plant.

⇒ **Sludge Processing Area:** Sludges from the Refinery are transferred to the Sludge Processing Area prior to being recycled in the Coker. Sludge is stored in tank(s) to prevent contact with stormwater. The sludge processing area is situated on concrete and is surrounded by a concrete dike. The area drains to the water treatment plant.

⇒ **Coke Yard:** Excess stormwater from the Refinery's enclosed coke yard that cannot be used to cut coke or spray the coke pile for dust suppression drains to the water treatment plant. Parts of the coke railcar loading area and any other coke storage outside the enclosed yard are managed to minimize the release of coke fines to the Refinery ditch system.

⇒ **Tanks 623 and 624:** These new tanks are constructed with secondary containment dikes with drainage to the Refinery wastewater treatment plant.

There are significant amounts of materials associated with the RCRA Solid Waste Management Units (SWMUs) and the Area of Concern (AOC) at the Refinery that are exposed to stormwater. Detailed information on the management of stormwater of the SWMUs and AOC at the Refinery is included in the following documents:

- Risk Assessment and Corrective Measures Study Report prepared for EPA Region III in October 2001
- Corrective Measures Implementation Design – Phase 1, prepared for EPA Region III in February 2007
- Revised Corrective Measures Implementation Work Plan, prepared for the EPA Region III in November 2008

These and other reports are maintained on file in the Refinery's Environmental Department. Below is a current status of each if the SWMUs and the AOC.

⇒ **SWMU No. 1: Landfarm 10, CAMU West.** Currently SWMU 1 has a perimeter berm system that captures precipitation that falls within the perimeter (contact water) and stores it until a pump can route it to the water treatment plant for treatment prior to discharge to Outfall 101.

⇒ **SWMU No. 2: Landfarm 11.** Precipitation that falls on this area is considered non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002.

⇒ **SWMU No. 3: Landfarm 12, CAMU East.** This material was consolidated as part of the CAMU East construction. This area was capped and construction was completed in 2008. Precipitation that falls on this area is considered non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002.

⇒ **SWMU No. 4A: Industrial Waste (Asbestos) Landfill.** All materials are covered following placement in the landfill. Therefore, precipitation that falls into this area is normally considered non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002. However, if a rainfall event were to occur prior to the waste

materials being covered, this contact water would be routed to the treatment system for treatment prior to discharge through Outfall101.

⇒ **SWMU No. 4B: Industrial Waste Landfill.** Precipitation that falls into this area is considered non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002.

⇒ **SWMU No. 5 North:** This SWMU contains impacted soil below a layer of clean soil. Therefore precipitation that falls on this area is considered non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002.

⇒ **SWMU No. 5 South:** The material from this area was removed and included in CAMU East. This area was capped and construction was completed in 2008. Precipitation that falls on this area is considered non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002.

⇒ **SWMU No. 6:** Stormwater from SWMU No. 6 drains in sheet flow to the east in the direction of Bull Creek.

⇒ **SWMU No. 7: Equalization Basin/Stormwater Retention Pond/Filter Backwash Pond.** Currently stormwater that falls within these areas (contact water) is captured in the ponds.

⇒ **SWMU No. 7: Former API Separator.** The material from this area was removed and included in the construction of CAMU East. This area was capped and construction was completed in 2008. Precipitation that falls on this area is non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002.

⇒ **SWMU No. 8: Leaded Tank Bottom Disposal Area.** This area is surrounded by perimeter dikes and stormwater (contact water) is routed to the waste water treatment plant prior to discharge to Outfall 101.

⇒ **SWMU No. 9: Unleaded Tank Bottom Disposal Area.** This area is also surrounded by perimeter dikes and stormwater (contact water) is routed to the waste water treatment plant prior to discharge to Outfall 101.

⇒ **SWMU No. 10: Former Heat Exchanger Cleaning Pad.** The stormwater from this area is considered contact water and is collected by area drains in the Oily Water Sewer. The stormwater is then conveyed to the waste water treatment plant, initially flows through Outfall 101 and is subsequently discharged through Outfall 001 at the end of the dock.

⇒ **SWMU No. 11: Container Storage Area.** This area was capped with asphalt paving during the CMI construction in 2007. Precipitation that falls on this area is considered non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002.

⇒ **SWMU No. 12: Hazardous Material Storage Building and Drum Storage Area.** This area was also capped during the CMI construction in 2007 and therefore can drain without further treatment. Precipitation that falls on this area is considered non-contact water and is conveyed through the refinery's surface water ditch system to the stormwater settling basin and discharges through Outfall 002.

⇒ **AOC No. 1: North Coker Ditch.** The stormwater from this area is considered contact water and is collected by area drains in the Oily Water Sewer. The stormwater is then conveyed to the waste water treatment plant, initially flows through Outfall 101 and is subsequently discharged through Outfall 001 at the end of the dock.

Significant solid materials stored at the refinery include refining process catalysts, refinery hazardous and nonhazardous wastes, petroleum coke, and refinery construction materials. Catalysts are generally stored indoors in sacks or in drums until placed into use in refinery process vessels. Catalyst loading and unloading takes place on process unit decks. When their useful life has been reached, catalysts are manually removed from process vessels and placed in roll-off boxes, drums, or other containers or removed with vacuum trucks. Process catalysts are presently shipped off-site for recycling, reuse, or disposal, and may on occasion be disposed in the active industrial waste landfill at the refinery.

Petroleum coke is processed and stored at the coke yard west of the Coker. Water is used for removing coke from coke drums and to wet the coke for dust suppression. Water that drains through the coke pile is collected at the Coker and reused for coke removal and dust suppression. Excess stormwater drains to the water treatment plant. Parts of the coke railcar loading area and any other coke storage outside the enclosed yard are managed to minimize the release of coke fines to the Refinery ditch system.

Significant materials are also present at the 90-day hazardous waste drum accumulation area (waste storage building) north of the Sulfur Recovery Unit (SRU). There is no stormwater runoff from the hazardous waste drum accumulation area, since it is enclosed. Stormwater from the concrete pad on which hazardous waste roll-off boxes are stored nearby accumulates in a sump until it is removed via vacuum truck for treatment in the refinery water treatment plant and eventual discharge through Outfall 101. Stormwater from the exposed area in which nonhazardous waste drums are accumulated is treated in the stormwater settling basin and discharged through Outfall 002. Hazardous and nonhazardous wastes are stored in drums or roll-off boxes to prevent contact with stormwater. Spills of hazardous and nonhazardous wastes from these containers are contained and cleaned up immediately. Recovered materials are properly containerized, classified, inventoried and managed as either hazardous or non-hazardous waste until they are transferred off-site for disposal or recycling.

Construction materials are stored indoors in warehouses or outside in open material storage yards. Typical construction materials present in open material storage yards at the Refinery include clean heat exchanger bundles, piping, valves, conduit, and structural steel. Stormwater from these areas is assumed to be non-contact and is discharged to the ditch system

To control the growth of nuisance vegetation, herbicides are periodically used throughout the Refinery in catchments and other storm water drainage areas. The frequency of use of the herbicides varies seasonally depending upon the rate of vegetation growth. Herbicides are evaluated for potential environmental impacts prior to usage in the Refinery. No herbicides are used at the Refinery, that contain any water priority chemicals. Herbicides are used in strict compliance with label instructions. Stormwater runoff samples collected from Outfalls 101 and 002 in 1999, 2004, and 2009 were analyzed for the presence of pesticides and herbicides listed in EPA Form 2F. None were detected.

Soil conditioners and fertilizers are not used in the Refinery. Fertilizers are not used in order to ensure compliance with the total phosphorus limits that will become effective at Outfall 002 effluent in 2011.

EPA Form 2F-IV.C.

Structural and Nonstructural Control Measures

The Yorktown Refinery is designed and managed to prevent or minimize the release of contaminants in storm water. Both structural and nonstructural control measures are employed. A description of the refinery's controls, and the treatment each of the refinery's storm water effluents receives is presented below.

Nonstructural controls include the following:

1. **Stormwater Pollution Prevention Plan**

   This Plan is developed and is maintained in accordance with the requirements of the facility VPDES permit. It describes the systems, equipment, and practices in place to prevent stormwater contamination and control stormwater discharges.

2. **Virginia Oil Discharge Contingency Plan (ODCP), Spill Prevention, Control, and Countermeasures (SPCC) Plan, and Facility Response Plan**

   The Refinery's ODCP, SPCC Plan, and Facility Response plan describe equipment, operation and maintenance practices, and response procedures for preventing pollutants from oil spills from contaminating storm water runoff at the refinery.

3. **RCRA Contingency Plan**

   The refinery's RCRA Contingency Plan describes procedures for preventing pollutants from hazardous and nonhazardous waste from contaminating storm water runoff at the refinery in the event of a RCRA incident.

(Note: Western currently intends to consolidate the above Plans into an Integrated Contingency Plan (ICP), which will address all applicable requirements.)

4. **Training Guides and Standard Operating Instructions**

   Training Guides and Standard Operating Instructions for each operating division at the refinery describe how refinery processing, mechanical, and pollution control equipment is to be operated to prevent pollutants associated with refinery operations from being released and contaminating storm water runoff.

5. **Formal and Informal Training**

   Refinery operating staff receive formal refresher training annually. Relevant topics in the refresher training session include Water Pollution Prevention, SPCC, and RCRA. Informal training may also be administered throughout the year. Training helps ensure that operating staff understands the importance of preventing storm water contamination.

6. **Effluent Monitoring**

   Routine chemical monitoring is performed on outfall 101 and 002 effluents, both of which contain storm water. Outfall 101 is monitored three days each week; outfall 002, one. Periodic acute and chronic toxicity tests as well as chemical monitoring for priority pollutant metals and organics are also performed on outfall 002 effluent, consistent with the toxics monitoring provisions of the refinery's current VPDES permit. Chemical and biological monitoring of water effluents help the refinery establish the effectiveness of its storm water management practices.

7. **Inspections and Maintenance**

The refinery is manned 24 hours a day, seven days a week. Operating staff inspects and maintain surveillance over refinery equipment as part of their duties. Maintenance staff or contractors make any repairs that might be required. Written records of some routine inspections, such as weekly aboveground storage tank inspections conducted as part of the AST Pollution Prevention inspection program, are maintained. More involved inspections and maintenance of operating areas are performed at the time of major turnarounds. Periodic internal and external inspections of AST's are performed in accordance with DEQ AST regulations. Inspections and maintenance prevent equipment failures that can cause spills, which contribute to storm water contamination.

Structural measures to control pollutants in storm water at the refinery include the following:

1. **Heat Exchanger Cleaning Pad**

On the heat exchanger cleaning pad, high pressure water streams are used to wash out exchangers and other equipment. Water and sludge mixtures from this process flow by gravity to a collection sump, which is then emptied to the sewer. The heat exchanger cleaning pad prevents wastewater from oily equipment cleaning operations from contaminating soils or the refinery surface ditch system.

2. **Decant Tanks 909, 910, 911, 912, and 913**

Decant tanks receive tank bottoms or water draws and provide a means of (1) controlling air emissions from tank water draws/bottoms, and (2) achieving better separation between tank water draws/bottoms and free hydrocarbons associated with them. The decant system is hard piped to the tanks and the slop oil system, thereby preventing the contamination of storm water by dissolved or free hydrocarbons present in tank water bottoms. Water from the decant system is discharged into the aboveground sewer system, while oil is transferred to a slop oil tank for reprocessing.

3. **Collection Systems**

Process Unit Decks

Processing, transfer, and storage areas such as the coke yard, process unit decks, and truck loading rack are paved, curbed as required, and provided with drainage to either the aboveground or belowground sewer system, whichever is appropriate. These decks prevent untreated process wastewater, oil, or chemical spills from contaminating soils or the refinery ditch system.

Sandblasting and Spraypainting Booth

A concrete pad with drainage to the belowground sewer system is provided to control dust, scale, and overspray from equipment sandblasting and spraypainting operations.

Aboveground Sewer System

The sewer system runs west to east along the south side of Avenue C. It conveys hydrocarbon-containing process wastewater streams such as tank water draws via forced main to the Water Treatment Plant.

Belowground Sewer System and Junction Boxes

This sewer system conveys (1) non-hydrocarbon-containing process wastewater streams, (2) storm water from certain oily areas, and (3) potable and sanitary wastewater from septic tanks to the Water Treatment Plant.

Thermal Relief Sumps

These sumps collect for reprocessing hydrocarbons from piping relief valve releases. These sumps prevent the release of oil to the environment, where it might contaminate storm water or groundwater.

Storm water from oily areas of the refinery, which is ultimately discharged through outfall 101, receives the following treatment.

1. **Wastewater Strainer**

   The wastewater strainer receives flow from the aboveground and belowground sewer systems and flows to the CPI Separators.

2. **Above Ground Sewer Pressure Control Manifold**

   This manifold consists of 4 motor operated valves, which open when aboveground sewer pressures are above 34 psi. It controls how many CPI Separators are operating at any given moment and divert wastewater flow from the separators to Tanks 23 and 24 if flows exceed proper operating ranges.

3. **Corrugated Plate Interceptor (CPI) Separators**

   3 CPI Separators: L-1639, L-1640, and L-1641

   4th CPI Separator: L-1642

   CPI separators recover sludge and oil from process wastewater. Recovered oil from CPI separators overflows into wet oil receiving drum Tank 55, and then is recycled through the slop oil system. CPI sludge, which is hazardous waste, is pumped to sludge Tank 22, then recycled in the Coker.

4. **Tank 55 Wet Oil Receiving Drum**

   This drum is a reservoir for recovered oil from the CPI separators prior to Tanks 907 and 908.

5. **Heavy Slop Oil Tanks 907 and 908**

   Tanks 907 and 908 receive wet oil from T-55. These tanks are heated with steam coils, which causes water to sink to their bottoms, and oil to float. Slop oil from them is pumped to heavy slop Tank 900 for reprocessing.

6. **Sludge Tank 22**

   These are holding containers and sludge collection containers for sludge and sediment from the CPI separators. The contents are taken by vacuum truck to the Sludge Processing Unit west of the Coker, then recycled in the Coker.

7. **Wastewater Receiving Tank 54**

   This tank is located downstream of the CPI separators. It stores CPI separator effluent, which is then pumped to Tanks 23 and 24.

8. **Stormwater Retention Tanks (SWRTs) 23 & 24**

   Capacity 150,000 BBL or 6.34 million gallons each

The SWRTs provide storm surge storage and flow equalization prior to the IGF and the activated sludge aeration tank. Each SWRT is equipped with oil skimmers.

9. Induced Gas Flotation Unit (I.G.F.)

The IGF further removes oil from the refinery's wastewater. Water from the IGF is pumped to the activated sludge aeration tank. Float is pumped to L-1642 CPI separator.

10. Activated Sludge Aeration Tank

The activated sludge aeration tank biologically treats refinery wastewater. Mixed liquor is pumped to the clarifier/thickener tank.

11. Clarifier/Thickener Tank

The clarifier separates mixed liquor from the activated sludge aeration tank into sludge and water. Water is recycled or discharged through outfall 101. Sludge is recycled to the activated sludge aeration tank or wasted to the aerobic digester.

12. Aerobic Digester

Sludge from the aerobic digester is taken by vacuum truck to the nonhazardous waste sludge tank west of the Coker, then recycled in the Coker.

Storm water from non-oily areas of the refinery, which is ultimately discharged through outfall 002, receives the following treatment:

Storm Water Settling Basin

The storm water settling basin is a quiescent lagoon with a surface area of 5.2 acres. The settling basin is fed by the surface ditch collection system that extends throughout the non-oily areas of the refinery. Both the ditch system and the settling basin are equipped with haybasket filters. The settling basin is also equipped with three sections of oil spill containment boom. This equipment is employed to capture oil and filter out contaminants, which might reach the refinery ditch system in the event of spills. Any spills that occur in the refinery ditch system are contained with earthen dams or absorbent blankets and recovered with vacuum trucks to prevent contamination of storm water.

ATTACHMENT 10

RECEIVING WATERS INFO./ TIER DETERMINATION/STORET DATA/ STREAM MODELING

M E M O R A N D U M

Department of Environmental Quality
Tidewater Regional Office

5636 Southern Boulevard Virginia Beach, VA 23462

SUBJECT: VPDES Application Requests
From ~~TO:~~ Stephen Cioccia, TRO
To ~~FROM:~~ Melinda Woodruff, TRO MW
DATE: 12/15/09
COPIES: TRO File - facility # 33 , PPP

An application has been received for the following facility:

VPDES #: VA0003018 Facility Name: **Western Refining Yorktown, Inc.**

Topo Map Name: Poquoson West

Receiving Stream: York River
[Must be provided for each outfall included in this request or request will be returned]

Attached is a Topographic Map showing facility property boundaries and outfall location(s) for those included in this request. **[MUST be provided or request will be returned]**

Attached is a stream data Request Form **(if data is requested).**

We request the following information from you:

1. __X__ Tier Determination. Tier: See Attachment 1 A-C
Please include a basis for the tier determination.

2. __x__ Stream Data Requested for outfall(s) **001, 002, 004**
["STREAM DATA RETRIEVAL REQUEST FORM" MUST be completed & included]
Returned as e-mail: LE4.3 data York R. Mouth

3. __X__ Is this facility mentioned in a Management Plan?

__✓__ No _____ Yes _____ No, but will be included when the Plan is updated.

4. __X__ Are limits contained in a Management Plan?

__✓__ No _____ Yes **(If Yes, Please include the basis for the limits.)**

5. __X__ Indicate outfall(s) which discharge directly to an impaired (Category 5) stream segment? Outfalls 001, 002 & 004

6. __X__ Are outfall(s) WLAs contained in an approved TMDL?

__✓__ No _____ Yes **(If Yes, Please include the WLAs)**

Return Date Requested: 1/4/10

Date Returned: 12/30/09

Until further guidance is provided by OWRM Permits, assessment of waters for NH_3 should be based upon OWRM Guidance No. 93-015 from Larry G. Lawson, dated June 22, 1993.

The above guidance specifies that the ambient NH_3 data should be compared to the NH_3 standard (calculated using 90th percentile of ambient data for pH and temperature of that segment) and by using the "STANDARDS.EXE Program" developed by OWRM Permits Modelling. (These environmental conditions are considered critical design conditions to protect water quality and to comply with WQS.) If the 97th percentile of the in-stream data is greater than either of the calculated NH_3 standards (chronic or acute), then OWRM considers the standard is being violated and the segment is WQL.

2.4.7 Wasteload Allocations Where The 7Q10 Is Zero *Or Minimal*

A discharge to a water course with a 7Q10 of zero or near zero would be required to have effluent limits that would comply with water quality standards, at a minimum. The discharge would have to be "self sustaining" so to comply with water quality standards. Therefore, the discharge would be WQL and the receiving water course with a 7Q10 of zero near zero would be considered a tier 1 segment.

Dry ditch = Tier 1

A discharge to a tier 1 water that empties into a tier 2 water would have to be evaluated for antidegradation at the point of confluence of the two water courses, if the discharge is in close enough proximity to impact the tier 2 water. In the above scenario, antidegradation requirements to protect tier 2 waters may apply to a discharge to a tier 1 water. Therefore, effluent limits may be more stringent than required by the numerical water quality standards.

If a discharge occurs to a dry ditch or tributary that empties into a free flowing stream and the distance from the discharge to the next confluence is too short to model (based upon the current modelling programs), then the discharge should be modelled as if it occurs directly to the free flowing stream.

2.4.8 Estuaries - Wasteload Allocations & TMDL Development

Similar to freshwater streams, water quality wasteload allocations (WQWLAs) and TMDLs in all tidal influenced waters will be expressed as a mass limitation for the conventional parameters (BOD_5, $cBOD_5$, TKN, and NH_3) and as a concentration for toxics.

Tidal freshwater segments and transition zone segments identified

For Outfalls 101 & 102 only

Attachment 1C-1

Tier 1 Justification for Low Flow Streams

DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER DIVISION

OFFICE OF WATER RESOURCE MANAGEMENT

(SECOND DRAFT)

GUIDANCE MANUAL

FOR THE

VIRGINIA WATER QUALITY MANAGEMENT PLAN

March 4, 1994

For Outfalls 101 & 102 only

Attachment 1C-2

ATTACHMENT 11

303(d) LISTED SEGMENTS

List of Impaired (Category 5) Waters in 2008 IR

Assessment Unit ID	*Waterbody Name*	*City / County**	*Assessment Unit Description*
VAT-F27E_YRK02C00	**York River - DSS AdminCond @ Wormley to USCG**		Segment is on Yorktown side (south shore) of river. DSS (ADMINISTRATIVE) shellfish condemnation #052-006A (effective 2002-03-07) (portion in York R), from Wormley Cr. to USCG Station, S shore to mid-channel. CBP segment YRKPH.

VA Overall AU 5A — 2.68 SQUARE MILES

Beneficial Use	*Impairment*	*Cause Category*	*First Listed on 303(d)*	*TMDL Schedule*	*Impairment Specific Comments and/or Impairment Specific VA Category*
Aquatic Life	**Aquatic Plants**	Category 5A	**2006**	**2010**	Category 5A 2006 00330 / 2008 YRKPH-SAV-BAY The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. *The mainstem York River was included in EPA's 1998 303(d) Overlisting as impaired of the* Aquatic Life Use; the impairment was attributed to excessive nutrients. During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Shallow Water Use's submerged aquatic vegetation acreage requirements.

Sources: Agriculture
Atmospheric Deposition - Nitrogen
Clean Sediments
Industrial Point Source Discharge
Internal Nutrient Recycling
Loss of Riparian Habitat
Municipal Point Source Discharges
Sediment Resuspension (Clean Sediment)
Sources Outside State Jurisdiction or Borders
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Tier Certification Outfalls 002 & 004
Attachment ZA-2

List of Impaired (Category 5) Waters in 2008 IR

Assessment Unit ID	*Waterbody Name*		*City / County**		*Assessment Unit Description*
Aquatic Life	**Oxygen, Dissolved**	Category 5A	**2006**	**2010**	Category 5A 2006 01779 / 2008 YRKPH-DO-BAY The Open-Water Aquatic Life Use is impaired based on failure to meet the 30-day dissolved oxygen criteria for Open Water - Summer & ROY. The mainstem York River was included in EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients. During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Open Water Use's summer dissolved oxygen criteria. 1999 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-F26E-01 & 1999 segment for DO (Attachment A, Category 1, Part 2) VAT-F27E-03.
			Sources: Agriculture Atmospheric Deposition - Nitrogen Industrial Point Source Discharge Internal Nutrient Recycling Loss of Riparian Habitat Municipal Point Source Discharges Sources Outside State Jurisdiction or Borders Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)		
Deep-Water Aquatic Life	**Oxygen, Dissolved**	Category 5A	**2006**	**2010**	Category 5A 2008 YRKPH-DO-BAY The Deep Water Aquatic Life Use is impaired based on failure to meet the 30-day dissolved oxygen criteria for Deep Water - Summer. The mainstem York River was included in EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients. During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Deep Water - Summer Use's dissolved oxygen criteria. 1999 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-F26E-01 & 1999 segment for DO (Attachment A, Category 1, Part 2) VAT-F27E-03.
			Sources: Agriculture Industrial Point Source Discharge Internal Nutrient Recycling Loss of Riparian Habitat Municipal Point Source Discharges Non-Point Source Wet Weather Discharges (Non-Point Source)		

Tier Jurisdiction outfalls 002 & 004
Attachment IM-2

List of Impaired (Category 5) Waters in 2008 IR

Assessment Unit ID	*Waterbody Name*		*City / County**		*Assessment Unit Description*
Fish Consumption	**PCB in Fish Tissue**	Category 5A	**2006**	**2018**	Category 5A 2006 70001 / 2008 F26E-01-PCB The segment is included under a 12/13/2004 VDH Fish Consumption Advisory due to polychlorinated biphenyls (PCBs) in fish tissue. The advisory recommends that adults eat no more than two meals/month of croaker, gizzard shad, and spot. High risk individuals such as women who are pregnant or may become pregnant, nursing mothers, and young children are advised not to eat any fish contaminated with PCBs. The TMDL is due in 2018. Previous Use ID = VDH-York PCBs. Previous TMDL ID = VDH- York PCB, VAT-F26E-04.
			Sources: Source Unknown		
Open-Water Aquatic Life	**Oxygen, Dissolved**	Category 5A	**2006**	**2010**	Category 5A 2006 01779 / 2008 YRKPH-DO-BAY The mainstem York River was included in EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients. During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed both the Open Water Use's summer dissolved oxygen criteria and the Deep Water Use's summer dissolved oxygen criteria. 1999 CD segment for nutrients (Attachment A, Category 1, Part 2) VAT-F26E-01 & 1999 segment for DO (Attachment A, Category 1, Part 2) VAT-F27E-03.
			Sources: Agriculture Atmospheric Deposition - Nitrogen Industrial Point Source Discharge Internal Nutrient Recycling Loss of Riparian Habitat Municipal Point Source Discharges Sources Outside State Jurisdiction or Borders Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)		

Tier Justification Outfalls 001, 002, 004
Attachment ZM-3

List of Impaired (Category 5) Waters in 2008 IR

Assessment Unit ID	*Waterbody Name*		*City / County**		*Assessment Unit Description*
Shallow-Water Submerged Aquatic Vegetation	**Aquatic Plants**	Category 5A	**2006**	**2010**	Category 5A 2006 00330 / 2008 YRKPH-SAV-BAY The Shallow-Water Submerged Aquatic Vegetation Use is impaired based on failure to meet the SAV acreage criteria. The mainstem York River was included in EPA's 1998 303(d) Overlisting as impaired of the Aquatic Life Use; the impairment was attributed to excessive nutrients. During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Shallow Water Use's submerged aquatic vegetation acreage requirements. Previous TMDL ID = VAT-F26E-08.

Sources: Agriculture
Atmospheric Deposition - Nitrogen
Clean Sediments
Industrial Point Source Discharge
Internal Nutrient Recycling
Loss of Riparian Habitat
Municipal Point Source Discharges
Sediment Resuspension (Clean Sediment)
Sources Outside State Jurisdiction or Borders
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Tier Justification Outfalls
Attachment ZM-4

001 of 004

List of Impaired (Category 5) Waters in 2008 IR

Assessment Unit ID	*Waterbody Name*	*City / County**	*Assessment Unit Description*
VAT-F27E_ZZZ01A00	**Unsegmented estuaries in F27E**		Non segmented estuarine areas of F27E - Lower York River. Primarily north shore tribs between Cedarbush and Timberneck Creeks. CBP segment YRKPH. No DSS condemnations.

VA Overall AU 5A — 0.27 SQUARE MILES

Beneficial Use	*Impairment*	*Cause Category*	*First Listed on 303(d)*	*TMDL Schedule*	*Impairment Specific Comments and/or Impairment Specific VA Category*
Aquatic Life	**Aquatic Plants**	Category 5A	**2006**	**2010**	Category 5A 2006 00330 / 2008 YRKPH-SAV-BAY During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Shallow Water Use's submerged aquatic vegetation acreage requirements.

Sources:
- Agriculture
- Atmospheric Deposition - Nitrogen
- Clean Sediments
- Industrial Point Source Discharge
- Internal Nutrient Recycling
- Loss of Riparian Habitat
- Municipal Point Source Discharges
- Sediment Resuspension (Clean Sediment)
- Sources Outside State Jurisdiction or Borders
- Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Aquatic Life	**Oxygen, Dissolved**	Category 5A	**2006**	**2010**	Category 5A 2006 01779 / 2008 YRKPH-DO-BAY During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Open Water Use's summer dissolved oxygen criteria.

Sources:
- Agriculture
- Atmospheric Deposition - Nitrogen
- Industrial Point Source Discharge
- Internal Nutrient Recycling
- Loss of Riparian Habitat
- Municipal Point Source Discharges
- Sources Outside State Jurisdiction or Borders
- Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Tier Justification Outfalls and Attachment ZA-5

List of Impaired (Category 5) Waters in 2008 IR

Assessment Unit ID	*Waterbody Name*		*City / County**		*Assessment Unit Description*
Open-Water Aquatic Life	**Oxygen, Dissolved**	Category 5A	**2006**	**2010**	Category 5A 2006 01779 / 2008 YRKPH-DO-BAY During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Open Water Use's summer dissolved oxygen criteria.
			Sources:	Agriculture Atmospheric Deposition - Nitrogen Industrial Point Source Discharge Internal Nutrient Recycling Loss of Riparian Habitat Municipal Point Source Discharges *Sources Outside State Jurisdiction or Borders* Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	
Shallow-Water Submerged Aquatic Vegetation	**Aquatic Plants**	Category 5A	**2006**	**2010**	Category 5A 2006 00330 / 2008 YRKPH-SAV-BAY During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Shallow Water Use's submerged aquatic vegetation acreage requirements.
			Sources:	Agriculture Atmospheric Deposition - Nitrogen Clean Sediments Industrial Point Source Discharge Internal Nutrient Recycling Loss of Riparian Habitat Municipal Point Source Discharges Sediment Resuspension (Clean Sediment) Sources Outside State Jurisdiction or Borders Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	

Tier Justification Outfalls 002 & 004
Attachment ZA-6

List of Impaired (Category 5) Waters in 2008 IR

Assessment Unit ID	*Waterbody Name*	*City / County**	*Assessment Unit Description*
VAT-F27E_ZZZ01A00	**Unsegmented estuaries in F27E**		Non segmented estuarine areas of F27E - Lower York River. Primarily north shore tribs between Cedarbush and Timberneck Creeks. CBP segment YRKPH. No DSS condemnations.

VA Overall AU 5A — 0.27 SQUARE MILES

Beneficial Use	*Impairment*	*Cause Category*	*First Listed on 303(d)*	*TMDL Schedule*	*Impairment Specific Comments and/or Impairment Specific VA Category*
Aquatic Life	**Aquatic Plants**	Category 5A	**2006**	**2010**	Category 5A 2006 00330 / 2008 YRKPH-SAV-BAY During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Shallow Water Use's submerged aquatic vegetation acreage requirements.

Sources:
- Agriculture
- Atmospheric Deposition - Nitrogen
- Clean Sediments
- Industrial Point Source Discharge
- Internal Nutrient Recycling
- Loss of Riparian Habitat
- Municipal Point Source Discharges
- Sediment Resuspension (Clean Sediment)
- Sources Outside State Jurisdiction or Borders
- Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Aquatic Life	**Oxygen, Dissolved**	Category 5A	**2006**	**2010**	Category 5A 2006 01779 / 2008 YRKPH-DO-BAY During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Open Water Use's summer dissolved oxygen criteria.

Sources:
- Agriculture
- Atmospheric Deposition - Nitrogen
- Industrial Point Source Discharge
- Internal Nutrient Recycling
- Loss of Riparian Habitat
- Municipal Point Source Discharges
- Sources Outside State Jurisdiction or Borders
- Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Tier Jurisdiction outfall 002
Attachment 18-2

List of Impaired (Category 5) Waters in 2008 IR

Assessment Unit ID	*Waterbody Name*		*City / County**		*Assessment Unit Description*
Open-Water Aquatic Life	**Oxygen, Dissolved**	Category 5A	**2006**	**2010**	Category 5A 2006 01779 / 2008 YRKPH-DO-BAY During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Open Water Use's summer dissolved oxygen criteria.
					Sources: Agriculture Atmospheric Deposition - Nitrogen Industrial Point Source Discharge Internal Nutrient Recycling Loss of Riparian Habitat Municipal Point Source Discharges Sources Outside State Jurisdiction or Borders Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)
Shallow-Water Submerged Aquatic Vegetation	**Aquatic Plants**	Category 5A	**2006**	**2010**	Category 5A 2006 00330 / 2008 YRKPH-SAV-BAY During the 2006 cycle, the revised Chesapeake Bay water quality standards were adopted. The York Polyhaline segment failed the Shallow Water Use's submerged aquatic vegetation acreage requirements.
					Sources: Agriculture Atmospheric Deposition - Nitrogen Clean Sediments Industrial Point Source Discharge Internal Nutrient Recycling Loss of Riparian Habitat Municipal Point Source Discharges Sediment Resuspension (Clean Sediment) Sources Outside State Jurisdiction or Borders Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)

Tier Justification Outfall 002
Attachment 18-2

ATTACHMENT 12

TABLE III(a) AND TABLE III(b) - CHANGE SHEETS

TABLE III(a)

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes FROM PREVIOUS PERMIT and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
101	BOD_5		503 monthly average/550 907 daily max/990	Production Rate Changed	3/4/10 MYW
101	TSS		403 monthly average/580 630 daily max/690	Production Rate Changed	3/4/10 MYW
101	TOC		1100 monthly average/1200 2000 daily max/2200	Production Rate Changed	3/4/10 MYW
101	Oil & Grease		150 monthly average/160 280 daily max/300	Production Rate Changed	3/4/10 MYW
101	Ammonia		260 monthly average/280 570 daily max/620	Production Rate Changed	3/4/10 MYW
101	Total Phenols		2.8 monthly average/3.0 6.8 daily max/7.4	Production Rate Changed	3/4/10 MYW
101	Sulfide		2.5 monthly average/2.7 5.6 daily max/6.1	Production Rate Changed	3/4/10 MYW
101	Total Chromium		3.3 monthly average/3.6 9.6 daily max/10	Production Rate Changed	3/4/10 MYW
101	Hexavalent Chromium		0.3 monthly average/0.31 0.6 daily max/0.68	Production Rate Changed	3/4/10 MYW
101,102, 002,004	Fecal Coliform And Enterococci	None/2/Month (between 10 am and 4 pm)	None/200 and 35	Water Quality Standards and BPJ for reclamation and reuse waters	3/4/10 MYW

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
002	Total Arsenic, Total Cadmium, Total Chromium	None/1/Month	NL monthly average and daily maximum	BPJ to protect water quality and monitor storm water for CAMUs	3/4/10 MYW
002	Total Nitrogen	1/Month/None		BPJ included in Nutrient General Permit	3/22/10 MYW
201	Total Xylenes	1/Month/1/Year	82 daily max/33	BPJ and Program Guidance	3/4/10 MYW
201	Naphthalene	1/Month/1/Year	62 daily max/10	BPJ and Program Guidance	3/4/10
201	All	1/Month/1/Year		BPJ and decrease in testing	3/4/10 MYW
004	Flow	None/1/Week	NL	BPJ for reclamation and reuse waters	3/4/10 MYW
004	pH	None/1/Week	6.0 min and 9.0 max	BPJ for reclamation and reuse waters	3/4/10 MYW

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL
Outfall 001, 002 Part I.A. Total Phosphorus footnote [a] for quantification level and reporting requirements (Part I.B.6 and I.B.7)	Removed because the parameter is limited in the permit, program guidance.	3/4/10 MYW
Outfall 102, 002 Part I.A. Total Organic Carbon [a] for quantification level and reporting requirements (Part I.B.6 and I.B.7)	Removed because the parameter is limited in the permit, program guidance.	3/4/10 MYW
Outfall 201 Part I.A. TPH, Benzene, Toluene, Ethylbenzene, Total Xylenes, and Naphthalene footnote [a] for quantification level and reporting requirements (Part I.B.6 and I.B.7)	Removed because the parameter is limited in the permit, program guidance.	3/4/10 MYW
Outfall 201 Part I.A. Benzene, Toluene, Ethylbenzene, Total Xylenes, and Naphthalene footnote [c] and [d] testing protocols per product	Removed based on BPJ to qualify the mix of wastewater and residues in the system as gasoline or other products at the outfall during testing.	3/4/10 MYW

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL
	Part I.B. Special Conditions – added .e for Compliance reporting regarding significant figures.	3/4/10 MYW
	Part I.B.6 added QLs for Arsenic, Cadmium, and Chromium	3/4/10 MYW

TABLE III(b)

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes MADE DURING PERMIT PROCESS and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
001	Fecal Coliform And Enterococci	None/2/Month (between 10 am and 4 pm)	None/200 and 35	Water Quality Standards and BPJ for reclamation and reuse waters	05/04/10 MYW
101, and 102	Fecal Coliform And Enterococci	2/Month (between 10 am and 4 pm)/None	200 and 35/None	Limits and monitoring was moved to the combined Outfall 001	05/04/10 MYW
002	Fecal Coliform And Enterococci		200 and 35/None	Mostly storm water that discharges with occasional diversions from Outfall 101 and 102	05/04/10 MYW
004	Fecal Coliform And Enterococci	2/Month (between 10 am and 4 pm)/None	200 and 35/None	This is Level 1 reuse water that is directly piped from HRSD.	05/04/10 MYW

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL
Outfall 201 Footnote (c) added	Sampling and reporting required only for wastewater discharges resulting from testing tankage, piping, and other equipment associated with the storage of products and feedstocks.	05/04/10 MYW
Part I.B.10 and I.D.3.a - no due date	Due date of December 31, 2010 based on facility's request.	05/04/10 MYW
Part I.B.11(a) change language - remove HRSD reclaimed water analysis	GDU gas scrubber discharge wastewater characterization	05/04/10 MYW
Part I.D.2.3. change time language - remove 30 minutes or no more than 1 hour	1 hour or no more than 3 hours	05/04/10 MYW
No QLs for limited parameters	Added Outfall 001, 002 Part I.A. Total Phosphorus footnote [a] for quantification level and reporting requirements; Outfall 102, 002 Part I.A. Total Organic Carbon [a] for quantification level and reporting requirements; Outfall 002 Part I.A. Oil & Grease [a] for quantification level and reporting requirements; Outfall 201 Part I.A. TPH, Benzene, Toluene, Ethylbenzene, Total Xylenes, and Naphthalene footnote [a] for quantification level and reporting requirements based on facility's request.	05/04/10 MYW

ATTACHMENT 13

NPDES INDUSTRIAL PERMIT RATING WORKSHEET
AND
EPA PERMIT CHECKLIST

NPDES Permit Rating Work Sheet

___ Regular Addition
___ Discretionary Addition
___ Score change, but no status change
___ Deletion

NPDES NO: |_V_|A__|_0__|_0__|_0__|_3__|_0__|_1__|_8

Facility Name:

|_W_|_e_|_s_|_t_|_e_|_r_|_n_|___|_R_|_e_|_f_|_i_|_n_|_i_|_n_|_g_|___|_Y_|_o_|_r_|_k_|_t_|_o_|w__|_n_|___|_I_|_n_|_c_|___|___|___|___|___|

City: |_Y_|_o_|_r_|_k_|_t_|_o_|_w_|_n_|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|

Receiving Water: |_Y_|_o_|_r_|_k_|___|_R_|_i_|_v_|_e_|_r_|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|___|

Reach Number: |___|___|___|___|___|___|___|___|___|___|___|

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

___ YES: score is 600 (stop here) _x_ NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

___ YES; score is 700 (stop here)
_x_ NO (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: |___|___|___|___| Primary SIC Code: |_2_|_9_|_1_|_1_|

Other SIC Codes: |___|___|___|___| |___|___|___|___| |___|___|___|___| |___|___|___|___|

Industrial Subcategory Code: |_0_|_0_|_2_| (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
___ No process waste streams	0	0	___ 3.	3	15	___ 7.	7	35
___ 1.	1	5	___ 4.	4	20	_x_ 8.	8	40
___ 2.	2	10	___ 5.	5	25	___ 9.	9	45
			___ 6.	6	30	___ 10.	10	50

Code Number Checked: |___|_8_|

Total Points Factor 1: |_4_|_0_|

FACTOR 2: Flow/Stream Flow Volume *(Complete Either Section A or Section B; check only one)*

Section A--Wastewater Flow Only Considered

Wastewater Type (See Instructions)			Code	Points
Type I:	Flow < 5 MGD	___	11	0
	Flow 5 to 10 MGD	___	12	10
	Flow > 10 to 50 MGD	___	13	20
	Flow > 50 MGD	___	14	30
Type II:	Flow < 1 MGD	___	21	10
	Flow 1 to 5 MGD	___	22	20
	Flow > 5 to 10 MGD	___	23	30
	Flow > 10 MGD	_x_	24	50
Type III:	Flow < 1 MGD	___	31	0
	Flow 1 to 5 MGD	___	32	10
	Flow > 5 to 10 MGD	___	33	20
	Flow > 10 MGD	___	34	30

Section B--Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	< 10%	___	41	0
	> 10% to < 50%	___	42	10
	> 50%	___	43	20
Type II:	<10%	___	51	0
	> 10% to < 50%	___	52	20
	> 50%	___	53	30

Code Checked from Section A or B: |_2_|_4_|

Total Points Factor 2: |_5_|_0_|

NPDES No.: |_V_|_A_|_0_|_0_|_0_|_3_|_0_|_1_|_8_|

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutant: (check one) _x_ BOD ___ COD ___ Other:_____

Permit Limits: (check one)		Code	Points
___	< 100 lbs/day	1	0
_x_	100 to 1000 lbs/day	2	5
___	>1000 to 3000 lbs/day	3	15
___	>3000 lbs/day	4	20

Code Checked: |_2_|

Points Scored: |___|_5_|

B. Total Suspended Solids (TSS)

Permit Limits: (check one)		Code	Points
___	< 100 lbs/day	1	0
_2_	100 to 1000 lbs/day	2	5
___	>1000 to 5000 lbs/day	3	15
___	>5000 lbs/day	4	20

Code Checked: |_2_|

Points Scored: |___|_5_|

C. Nitrogen Pollutant: (check one) _x_ Ammonia ___ Other: _____

Permit Limits: (check one)		Code	Points
___	< 300 lbs/day	1	0
_x_	300 to 1000 lbs/day	2	5
___	>1000 to 3000 lbs/day	3	15
___	>3000 lbs/day	4	20

Code Checked: |_2_|

Points Scored: |___|_5_|

Total Points Factor 3:|_1_|_5_|

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

___ YES (if yes, check toxicity potential number below)
_x_ NO (if no, go to Factor 5)

Determine the human health toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column -- check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
___ No process waste streams	0	0	___ 3.	3	0	___ 7.	7	15
___ 1.	1	0	___ 4.	4	0	___ 8.	8	20
___ 2.	2	0	___ 5.	5	5	___ 9.	9	25
			___ 6.	6	10	___ 10.	10	30

Code Number Checked: |___|___|

Total Points Factor 4: |___|___|

NPDES No.: |_V_|_A_|_0_|_0_|_0_|_3_|_0_|_1_|_8_|

FACTOR 5: Water Quality Factors

A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge?

		Code	Points
_x_	Yes	1	10
___	No	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

		Code	Points
_x_	Yes	1	0
___	No	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

		Code	Points
___	Yes	1	10
_x_	No	2	0

Code Number Checked: A |_1_| B |_1_| C |_2_|

Points Factor 5: A |_1_|_0_| + B |_0_| + C |___|_0_| = |_1_|_0_| **TOTAL**

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from Factor 2): |_5_|_2_| *Enter the multiplication factor that corresponds to the flow code:* |___|_1_|

Check appropriate facility HPRI Code (from PCS):

	HPRI #	*Code*	*HPRI Score*	Flow Code	Multiplication Factor
___	1	1	20	11, 31, or 41	0.00
				12, 32, or 42	0.05
___	2	2	0	13, 33, or 43	0.10
				14 or 34	0.15
_x_	3	3	30	21 or 51	0.10
				22 or 52	0.30
___	4	4	0	23 or 53	0.60
				24	1.00
___	5	5	20		

HPRI code checked: |_3_|

Base Score: (HPRI Score) __30_____ x (Multiplication Factor) ___1.0____ = ___30_____ (TOTAL POINTS)

B. Additional Points--NEP Program
For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

		Code	Points
_x_	Yes	1	10
___	No	2	0

C. Additional Points--Great Lakes Area of Concern
for a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see instructions)

		Code	Points
___	Yes	1	10
_x_	No	2	0

Code Number Checked: A |_3_| B |_1_| C |_2_|

Points Factor 6: A |_3_|_0_| + B |_1_|_0_| + C |_0_|_0_| = |___40_____| **TOTAL**

NPDES Permit Rating Work Sheet

NPDES NO: |_V_|_A_|_0_|_0_|_0_|_3_|_0_|_1_|_8_|

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	40
2	Flow/Stream flow Volume	50
3	Conventional Pollutants	15
4	Public Health Impacts	10
5	Water Quality Factors	40
6	Proximity to Near Coastal Waters	
	TOTAL (Factors 1-6)	**155**

S1. Is the total score equal to or greater than 80? X Yes (Facility is a major) ___ No

S2. If the answer to the above question is no, would you like this facility to be discretionary major?
___ No
___ Yes (add 500 points to the above score and provide reason below:

Reason:

_____

_____

_____

_____

_____

NEW SCORE: 155

OLD SCORE: _____

Melinda Woodruff
Permit Reviewer's Name

(757) 518-2174
Phone Number

January 2010
Date

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Western Refining Yorktown, Inc.

NPDES Permit Number: VA0003018

Permit Writer Name: Melinda Woodruff

Date: January 2010

Major [x] **Minor** [ ] **Industrial** [ ] **Municipal** [ ]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		

I.B. Permit/Facility Characteristics - cont.	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?	X		
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?		X	
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?	X		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?	X		
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals

(To be completed and included in the record for all non-POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet **or** permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?	X		
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?	X		
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			X
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?	X		
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?	X		
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a "reasonable measure of ACTUAL production" for the facility (not design)?	X		
5. Does the permit contain "tiered" limits that reflect projected increases in production or flow?		X	
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ) – cont.	Yes	No	N/A
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?	X		
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			X
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?			X
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?			X
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?			X
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the fact sheet indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?		X	
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?			X
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

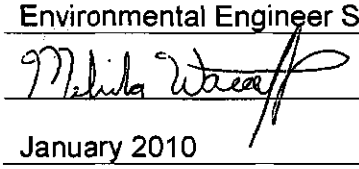
List of Standard Conditions – 40 CFR 122.41

Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
Duty to mitigate	Monitoring and records	Transfers
Proper O & M	Signatory requirement	Monitoring reports
Permit actions	Bypass	Compliance schedules
	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Melinda Woodruff
Title	Environmental Engineer Sr.
Signature	
Date	January 2010

ATTACHMENT 14

CHRONOLOGY SHEET

Chronology of Events
03/05/2010

NPID	VA0003018	Facility Name	Western Refining Yorktown Incorporated	Activity	Reissuance

Code	Event	Date	Comment
APRET4	App returned/Additional info requested 4th time		
MISC	Miscellaneous	12/08/2009	Tom requested more time for corrections, I said n problem but I'd like to have everything in by the 17 which is when we are expecting info. from the oth state agencies.
DT1VIMS	VMRC concurrence on draft permit		
DTOWN3	FS/SOB draft permit sent to owner 3rd time		
PN2CO	PN sent to CO for mailing list web site distrib		
PNOT	Date of Public Notice		
LGNRAPP	local gov't notified of receipt of app. (Iss/Mod)		
DTCOE	Comments rec'vd from Federal Agencies on App		
VPDESNO	Permit number obtained (Iss)		
DTADJ	FS/SOB/draft permit sent to adj. State(		
DTOWNC3	Third time comments received from owner		
DTOWNC4	Owner concurrence of draft permit		
LGNPERM	Local gov't notification		
316A	316(a) Variance		
APRPHOCAL2	Second Application Reminder Phone Call	10/23/2009	Spoke with Tom Numbers at ERM-Consultant for Western. Questions about application answered. They will be asking for the SW outfall that discharges to the treatment plant to be eliminated
FAMSUB	Financial Assurance Mechanism Submitted		
DTC1VDH	Comments rec'vd from State Agencies on App	01/11/2010	VDH 12/8/09, DSS 1/11/2010
DTDDP	Draft permit developed	03/05/2010	
DTC2VDH	VDH concurrence on draft permit		
DTDMRDUE	First DMR due		
DTPKVDH	FS/SOB draft permit sent to State Agencies (list i		
ROLISTR	Riparian owner list received		
APRD4	Applic/Additional info received at RO 4th time		
DTEPA	FS/SOB draft permit sent to EPA/OWP		
APRET1	App returned/Additional info requested 1st time	11/24/2009	sent email requesting additional information and corrections.
APRET2	App returned/Additional info requested 2nd time	12/21/2009	
DTSITERP	Site inspection report	10/02/2009	9/30/09 inspection date
DTREV	Draft reviewed		

NPID	VA0003018	Facility Name	Western Refining Yorktown Incorporated	Activity	Reissuance

Code	Event	Date	Comment
DTOWN1	FS/SOB draft permit sent to owner		
DTC2EPA	EPA concurrence on draft permit		
SCCERTR	State Corporation certification received		
RONOTE	Riparian landowners notified (Iss,Mod)		
APRET3	App returned/Additional info requested 3rd time		
DTMIF	App sent to Fed Agencies (list in comment field)		
APCP	Application totally / technically complet	02/10/2010	
DTSITE	Site visit	12/21/2009	
DTOBJ1	First time comments received from owner on draft		
DTOWN4	FS/SOB draft permit sent to owner 4th time		
DTNEWS	Public notice letter sent to newspaper		
PNHEAR	Public hearing date		
DTEFF	Permit effective		
DTLP	Reissuance letter mailed	05/15/2009	
APRD2	Applic/Additional Info received at RO 2nd time	12/01/2009	
DT1PLAN	FS/SOB draft permit sent to planning		
DTPLAN	Planning concurrence on draft permit		
DTOWN2	FS/SOB draft permit sent to owner 2nd time		
DTSIGN	Date Permit signed		
FLED	Permit expires	05/15/2010	
PREVFLED	Old expiration date	05/15/2010	
APDU	Reissuance application due	11/16/2009	
DEPFEE	Application fee deposited		
RORTTC	Riparian owner request sent to tax commissioner		
ROAPCP	Application Administratively complete	12/03/2009	
DT1VDH	App sent to State Agencies (list in comment field)	12/03/2009	VDH, DSS, VMRC
DTOWNC2	Second time comments received from owner		
DTPNAUT	Public notice authorization received from owner	01/12/2010	
MISC	Miscellaneous	08/17/2009	Preapplication Meeting with Tom Numbers
APRPHOCAL1	First Application Reminder Phone Call	07/30/2009	Spoke with Tom Numbers at ERM-Consultant hire to put together reissuance application.
APRD	Application received at RO 1st time	11/16/2009	
APRD3	Applic/Additional info received at RO 3rd time		
MISC	Miscellaneous	08/27/2009	Request from Western to correct township change from Grafton, VA to Yorktown, VA, the current official address
APCOMLET	App complete letter sent to permittee	02/10/2010	